

A grammar of Gaahmg

A Nilo-Saharan Language of Sudan

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Abbreviations

ACC	object (accusative)	LP	locative phrase
ACM	accompaniment	MID	middle verb form
ADJ	adjective	N	noun
ADJV	adjectival verb	NA	not attested
ADV	adverb	NP	noun phrase
ANTIP	antipassive	PAS	(agentless) passive
Ar	Arabic loan word	PAS.A	agented passive
CAUS	causative	PF	perfective
COMP	completive	PL	plural
COP	copula	PP	prepositional prefix
CONT.N	non-past continuous	POS	possessive
CONT.P	past continuous	PREP	preposition
D	deictic	PRON	pronoun
DAT	dative	QM	question marker
DEF	definite	RC	relative clause
DEM	demonstrative	RDM	relative (clause) definite
EV	evidential		marker
GEN	genitive	RDTM	relative (clause) dative
GP	general preposition		marker
INF	infinitive	REL	relativizer
INST	instrumental	REFL	reflexive
IMP	imperative	RLCM	relative (clause)
IPF	imperfect		locative copular marker
INCP	incompletive	SG	singular
LCM	locative copular marker	SBO	subordinate
LOC	locative		clause-final marker

SBO1	subordinate ‘when, because, questions’	VN []	verbal noun phonetic (surface) form
SBO2	subordinate ‘if’	//	phonemic (underlying) form
SBO3	subordinate ‘but’		
SBJV	subjunctive	()	example number
UNC	uncertainty	{ }	rule number
UR	underlying representation	- =	bound suffix bound clitic
V	verb		
VP	verb phrase		

<u>Pronouns are glossed as follows:</u>		A	object (accusative)
1	first person	AM	marked object
2	second person	D	dative
3	third person	P	possessive
s	singular	R	reflexive
p	plural	O	object of
N	subject (nominative)	b	preposition bound

Suffix symbols are as follows:

-C	copied consonant taking all the features of the stem final consonant
-O	back rounded vowel unspecified for [ATR]
-E	front unrounded vowel unspecified for [ATR]
-A	back vowel unspecified for [round] and [ATR]
- <u>A</u>	back unrounded vowel unspecified for [ATR]
-V	copied vowel taking all the features of the stem final vowel
- ⁺ g	[+ATR] suffix spreading [+ATR] quality to the root
- ⁺ V	[+ATR] person marker vowel

Morpheme list

Title	Morpheme	Section
Copular clitics (COP)	$= \bar{A}n_{\text{appox-final}}, = \bar{V}n_{\text{mon.vow-final}},$ $= \bar{n}_{\text{poly.vow-final}}, = \bar{A}_{\text{SG,cons-final}},$ $= \bar{A}_{\text{PL,cons-final}}$	4.1.1, 7.2, 8.3.1
Definite clitics (DEF)	$= An_{\text{appox-final}}, = Vn_{\text{mon.vow-final}},$ $= n_{\text{poly.vow-final}}, = \bar{A}_{\text{cons-final}}$	4.1.2, 7.3, 8.3.2
Relative clause definite clitics (RDM)	$= \bar{E}_{\text{SG}}, = \bar{E}_{\text{PL}}$	4.1.3, 7.4, 8.3.3, 10.9

Title	Morpheme	Section
Locative copular (LCM) /Dative clitics (DAT)	$= \tilde{A}n_{\text{approx-final}}, = \tilde{V}n_{\text{mon.vow-final}},$ $= n_{\text{poly.vow-final}}, = \tilde{A}n_{\text{cons-final}}$	4.1.4, 4.1.6, 7.5, 8.3.4
Accompaniment clitics (ACM)	$= n\tilde{E}_{\text{vow-final}}, = \tilde{E}_{\text{cons-final}}$	4.1.8, 7.6, 8.3.6
Clause-final subordinate clitics (SBO)	$= n\acute{E}_{\text{vow-final}}, = \acute{E}_{\text{cons-final}}$	4.1.10, 7.7, 8.3.8
Plural agreement (PL)	-gg-	5.1
First person (1)	-a-, -ə-	5.1
Second person (2)	-ɔ-, -u-	5.1
Third person (3)	-ɛ-, -i-	5.1
Object pronoun clitics (A)	$a_{1sA}, = O_{2sA}, = E_{3sA}, = i_{3sAM},$ $aaaggá_{1pA}, = OOgg\acute{O}_{2pA}, = EEgg\grave{E}_{3pA},$ $= iigg\grave{d}_{3pAM},$	5.4, 10.4
Dative pronoun clitics (D)	$= \hat{a}n_{1sD}, = \hat{u}n_{2sD}, = \hat{i}n_{3sD},$ $= \hat{a}gg\acute{o}n_{1pD}, = \hat{u}gg\acute{u}n_{2pD}, = \hat{i}gg\grave{e}n_{3pD}$	5.5, 10.5
Prepositional prefix (PP)	d-	5.7, 11.4
Noun singular suffixes (SG)	$-d_{\text{son,vow-final}}, -gg_{\text{son-final}}, -Ad_{\text{son-final}},$ $-AAd_{\text{son-final}}, -Ed_{\text{son-final}}$	6.2.1
Noun plural suffixes (PL)	$-gg_{\text{son,vow-final}}, -Agg_{\text{obs-final}}, -EEgg_{\text{son-final}},$ $-AAgg_{\text{son-final}}, -OOgg_{\text{son-final}},$ $-AAd_{\text{kin-terms}}, -d_{\text{kin terms}}, -əgg_{\text{body parts}},$ $-^+gg_{\text{body parts}}, -V^+gg_{\text{body parts}},$	6.2.2, 6.2.3
Adjective plural suffixes (PL)	$-gg_{\text{son,vow-final}}$	8.2.1
Infinitive suffix (INF)	$-C_{\text{INF}}$	9.2
Subjunctive suffixes (SBJV)	$-(A)_{\text{default}}, -C(A)_{\text{obs-final}}, -(n)(A)_{\text{approx-final}},$ $-d(A)_{\text{vow-final}}, -dA_{\text{PL}}$	9.3
Imperative suffixes (IMP)	$-\emptyset_{\text{default}}, -n_{\text{approx-final}}, -d^+A_{\text{PL}}$	9.4
Completive suffix (COMP)	-sA	9.5
Incompletive (INCP)	$-\emptyset$	9.6
Continuous suffixes (CONT)	$-\underline{A}n_{\text{CONT.N}}, -\underline{A}n_{\text{CONT.P}}$	9.7
Deictic suffixes (D)	$-C\acute{A}gg\bar{A}_{\text{COMP.D}}, -(CAAg)gAn_{\text{CONT.P.D}},$ $-(CAg)gAn_{\text{CONT.N.D}}, -(C\acute{A}g)g\bar{A}_{\text{IMP.D}},$ $-d\acute{u}\bar{u}_{\text{IMP.PL.D}}$	9.9

Antipassive suffix (ANTIP)	$-\text{An}_{\text{ANTIP}}$	9.10
Causative suffixes (CAUS)	$-\text{s}^+\text{A}_{\text{COMP}}$ $-\text{d}^+\text{A}$	9.11
Agented passive clitics (PAS.A)	$=\tilde{\text{E}}_{\text{SG}}, =\tilde{\text{E}}\tilde{\text{E}}_{\text{PL}}$	10.2
(Agentless) passive clitics (PAS)	$=\bar{\text{A}}\text{n}\bar{\text{A}}_{\text{stem.vow-final}}, =\bar{\text{A}}_{\text{stem.cons-final}}$	10.3
Imperfect clitics (IPF)	(various) $=\text{E}_{\text{COMP.IPF.1sN}}, =\tilde{\text{E}}_{\text{COMP.IPF.3sN}},$ $=\hat{\text{A}}\bar{\text{A}}_{\text{COMP.IPF.1pN}}, =\tilde{\text{E}}\tilde{\text{E}}(\text{gg}\hat{\text{A}})_{\text{COMP.IPF.3pN}}$	10.6
Subordinate verb-final clitics (SBO1,2,3)	(various) $=\tilde{\text{E}}_{\text{COMP.SBO1.1sN}}, =\hat{\text{i}}_{\text{COMP.SBO1.3sN}},$ $=\bar{\text{A}}_{\text{COMP.SBO1.1pN}}, =\hat{\text{n}}\text{gg}\hat{\text{i}}_{\text{COMP.SBO1.3pN}}$	10.7
Perfect bound morphemes (PF)	$-\text{CAr}_{\text{PF.INCP, PF.IMP}}, =\bar{\text{Ar}}_{\text{PF.CONT.N}}, =\text{r}_{\text{PF}}$	10.8
Verbal Noun clitics (VN)	$=\text{gg}_{\text{son.vow-final}}, =\text{Agg}_{\text{obs.final}},$ $=\text{EEgg}_{\text{son-final}}, =\text{AAgg}_{\text{son-final}}$	10.10

1 Introduction

Gaahmg (Gaam, ethnologue code [tbi]) is a Nilo-Saharan, Eastern Sudanic language spoken in the Ingessana Hills of the Blue Nile Province of North Sudan, near the Ethiopian border. For centuries, the Gaahmg people have fought off invaders entering their hills. Even today, their culture and language have been less influenced by outsiders than those of other ethnic groups in the Blue Nile Province. Although Gaahmg speakers outnumber speakers of other languages in the area, little documentation has been done of their language. This work presents a description of Gaahmg grammar, including its phonology, morphology, and syntax.

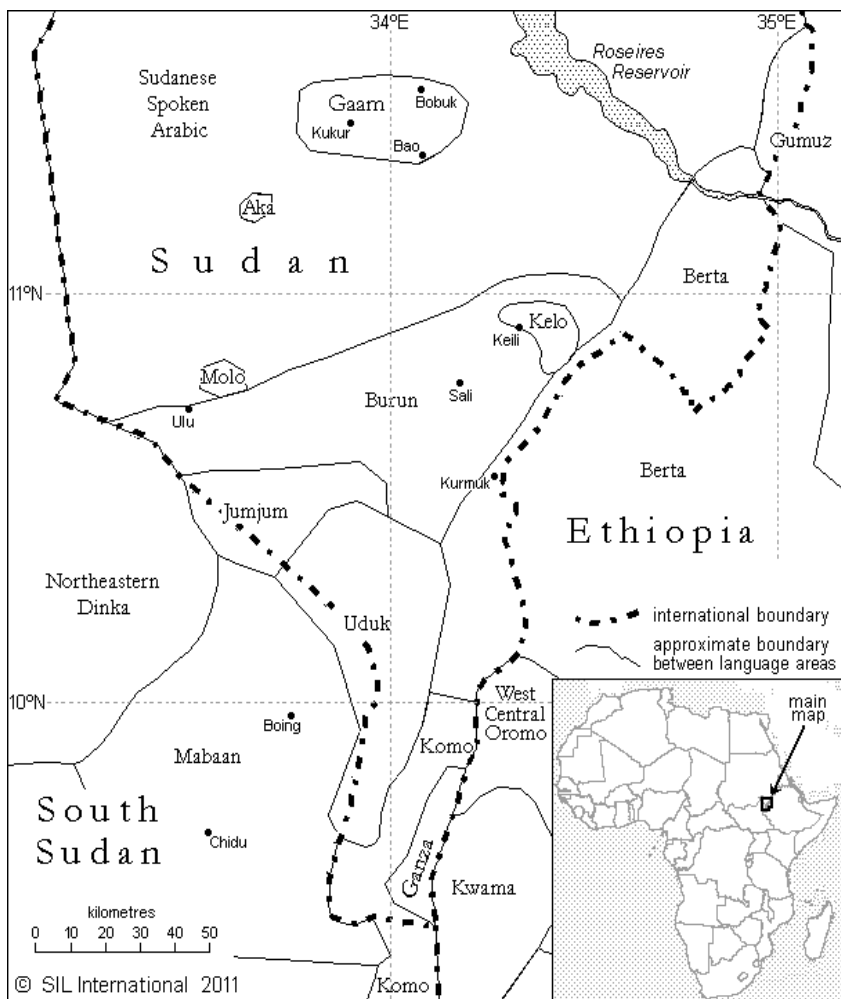
1.1 Gaahmg language

At the request of speakers, the name of the language is written orthographically with the grapheme /aah/ for the long vowel [aə]. The language name is pronounced [gə̀ðə̀mg], meaning ‘people of the Gaam or Ingessana Hills’. Other names for the language include Ingessana, Gaam, and Tabi. Ingessana is a name given by Arabs. Gaam is the word for hill, and Tabi is a hill name in the home area (Bender 1980:4).

Gaahmg is classified as a Nilo-Saharan, Eastern Sudanic language. Greenberg was the first to list Tabi (Gaahmg) as a separate branch of the Eastern Sudanic sub-family (1955:62). Bender proposed that Gaam belongs to an Eastern Jebel Family including the languages Aka, Molo, Kelo, and Ben Sheko which all have a first singular pronoun with the segment *n* and other similarities. He added that the total number of speakers of Eastern Jebel languages other than Gaam speakers probably does not exceed 2,000 (Bender 1998:39).

The Ethnologue states there are 67,200 Gaahmg speakers, who mainly live in the Ingessana Hills of the Blue Nile Province (Gordon 2005), bordering Ethiopia to the east. There are four dialects: Jog Tao (Soda area), Buwag (southeast area), Kulag (Bao area), and Jog Goor (northwest area). The first two are more closely related to each other, and the last two to each other. Although the dialects are distinct enough phonetically and lexically to identify a person as from the dialect area, they are easily understood from one to another (Jedrej 1995: 32). The teachers, politicians and other educated people mostly come from the Jog Tao dialect, which is analyzed in this thesis.

There are three published linguistic works on the language that predate the research of this author: *Ethnographical Observations in Dar Fung* by E. E. Evans-Pritchard (1932), *The Phonological Features of the Ingessana Language* by W. J. Crewe (1975), and *Preliminary Gaam-English-Gaam Dictionary* by M. L. Bender & Malik Agaar Ayre (1980).



1.2 Gaahmg land, history, and people

The Ingessana Hills are southwest of Damazine and northwest of Kurmuk in the Blue Nile Province. The capital of the Ingessena area is Bao (11.350797, 34.083710) and the government offices are in Soda. There are reported to be 78 hills in the area, some rising 300 meters above the surrounding flat plains. While the plains are grassland with occasional acacia trees, the vegetation in the hills has a much greater variety of plants and trees, with water sources even in the dry season.

Gaahmg speakers live in the hills and in the plains, interacting with other ethnic groups in the surrounding geo-political area known as the Funj. In addition to the related languages of the Aka, Molo, Kelo, and Ben Sheko, there are the Berta, Gumuz, Oromo to the east, the Burun, Jumjum, Uduk, Mabaan to the south, Dinka and Nuer to the west, and Sudanese Arabs to the north.

As Jedrej (1995) explains, the Gaahmg have historically protected themselves and their hills from many invasions of outsiders. As a result, their culture is much more resistant to change than that of other ethnic groups of the Funj. Mainly self-sustaining in what they cultivate in the hill area, the Gaahmg are slow to grow cash crops or to migrate for wages. As a result of past conflict with Arabs and other invaders, they have a reputation of being hostile towards strangers and even refugees.

Although the origins of the Gaahmg are unclear, the Ingessena hills were alternately raided for several hundred years by the Funj sultans of Sennar to the northwest or by the Abyssinian kings of Gondar to the northeast, the Ingessena hills being a borderland between these kingdoms that plundered for slaves and gold. The Dinka and Nuer to the southwest raided the Gaahmg for cattle during times of drought or flooding in their own areas (Jedrej 1995).

From 1820-1855, the ruling Turk-Egyptian Empire demanded heavy tribute of slaves and gold. When they did not receive their demands, they attacked and imprisoned the Gaahmg, taking several hundred prisoners at a time. The Gaahmg fought back with speed and surprise attacks, causing many attacks of the Empire to be unsuccessful (Jedrej 1995).

In 1888-1889, the Mahdi government raided the Funj area and the Ingessena hills in particular, to provide for Khartoum during a severe and widespread famine, taking 1000 head of cattle from the Gaahmg on one occasion. The Gaahmg made counter attacks and held Arabs captive for ransom at ten head of cattle per person (Jedrej 1995).

From 1903-1934, the Anglo-Egyptian Government was less brutal but continued the same pattern of collecting tribute and squelching resistance. When the Gaahmg attacked tax patrols in protest to tribute collections, the Anglo-Egyptian government conducted 'military operations' which, although they did not involve taking slaves, seized livestock and killed those deemed responsible (Jedrej 1995).

The main occupations of the Gaahmg relate to livestock, cultivation, or craft making. In particular, the Gaahmg grow sorghum, sesame, maize, peppers, gourds, and tobacco. They keep cattle, goats, pigs, sheep, hens, donkeys, mules, and camels. During the dry season, young men and boys take herds of up to 50 head of cattle a hundred miles south to the Yabus River for water and pasture. Some weavers,

potters, and blacksmiths peddle their products in neighboring towns. However, livestock is generally not taken outside the area for sale, but herders wait for merchants travelling into the hills for trade (Jedrej 1995).

Traditional religion and government of the Gaahmg are tied to localities. There are houses of god, or shrines, around which communities are centred. A group of elders in each community rules over and cares for the people they represent, deciding legal matters and organizing activities. An appointed elder is the custodian of the community shrine where ceremonies and celebrations take place. Each of the smaller or less important shrines is grouped under four great or important shrines, in each of the four dialect territories, which decide the annual festivals (Jedrej 1995).

1.3 The current research

The current research was conducted beginning in 2003 with speakers living in Khartoum. From April 2004-April 2008 the author continued field work in Khartoum as a language research associate of the University of Khartoum, Institute of African and Asian studies. The primary language resource persons for this period were Hashim Orta Adaw Madal, Safadin Hamid Ateeb, and Annaim Karaka Farajalla Yasin. All three are from the town of Soda, have spoken the Jog Tao dialect from childhood, and continue to speak it whenever they are with other speakers of the language. After April 2008, access to speakers was limited to two three-week trips to Kurmuk in southern Blue Nile Province, near the home area. The primary language resource person for this trip was Annaim Karaka Farajalla Yasin.

The original data set of nouns and verbs were taken from word lists entered into dictionary software by speakers of the language, which became the Gaahmg-English Dictionary (Madal 2004). The singular and plural forms of nouns and subjunctive and completive forms of verbs were written on cards and glossed in English and Arabic. The cards were sorted numerous times to isolate segments and tone in the same environments, and each time speakers read the words on the cards.

Texts were recorded on cassette, transcribed, and glossed by speakers of the language, the recordings made from a variety of individuals in the home area. Natural clauses were taken from the texts as frames for eliciting nouns and verbs with various morphemes. The cards were again used to elicit multiple nouns, verbs, and adjectives in the frames.

The data set on which the thesis is based contains 700 nouns, 150 verbs, 40 adjectives, and a handful of other parts of speech. There are 16 texts of about 30 interlinearized pages that have been collected. These consist of folk narratives, historical narratives, personal narratives, persuasive texts, and poetic genres. Ten of these texts are presented in chapter 17.

1.4 Overview and notations

Gaahmg is rich in morphology, particularly in nouns, adjectives, and verbs. To correctly analyze the morphemes and their alternations, we also discuss their phonological foundation and describe their syntactic environments.

The phonological description of chapter 2 includes distribution and contrasts of phonemes, phonological rules, syllable structure, and a tonal description of roots. Consonant weakening is common word-finally and intervocalically in roots and across morpheme boundaries. A significant number of lexical distinctions as well as distinctions in grammatical function are made exclusively by [ATR] harmony and tone. Thus, the phonological analysis of these aspects is indispensable for the morphological analysis.

Segmental and tonal morphophonological rules are presented in chapter 3. The vast majority of the alternations when morphemes combine can be attributed to processes described by these eleven rules. Clitics, having different alternations and functions than suffixes, are shown in chapter 4 to attach to more than one word category. In 4.2, there are four other criteria discussed which can be used to distinguish suffixes from clitics such as that suffixes attach to underlying forms of roots, whereas clitics attach to surface forms of stems. In 4.3, we establish adjectives as a distinct lexical category from nouns and verbs since they are not used in some of the syntactic constructions of either nouns or verbs, and there are some differences in the morphology when used as either category.

In chapters 5-13, word categories are presented. The morphology of nouns (chap. 6-7), adjectives (chap. 8), and verbs (chap. 9-10) are the heart of this thesis. Pronouns (chap. 5), prepositions (chap. 11), body part locatives (chap. 12), and adverbs (chap. 13) are the minor word categories described, which have little or no morphology.

In chapter 6, we see that nouns have singular and plural suffixes. Although the vast majority of singular nouns do not have suffixes, plural marking is obligatory with plural referents. There are several plural suffixes, each with different tonal allomorphs, although most includes the segment *gg*. Most plural suffixes have no semantic correlation with the nouns to which they attach, but the suffix attached sometimes depends on the root-final segment.

As shown in chapter 7, noun stems may attach one or more of seven clitics: copular, definite, locative copular, dative, accompaniment, subordinate, or relative clause definite clitics. The clitics have different segmental or tonal allomorphs which attach depending on the stem-final segment. In chapter 8, we show that adjectives are similar to nouns in stem and word morphology. Most adjectives attach the plural suffix *-gg* which is required on plural referents. The same seven clitics attaching to nouns may also attach to adjectives.

In chapter 9, the verb stem is discussed which is composed of the root and optional slots for antipassive, causative, and modal or aspect morphemes. Aspect is marked segmentally in the verb word—by completive and continuous suffixes. Past tense is marked by tone on the verb stem—High tone on the non-past continuous suffix and MH tone on the past continuous suffix. Infinitive, subjunctive and imperative forms also add suffixes to the root. Deictic suffixes for each verb aspect and mode are also attached to the root. Finite verb forms are inflected for subject person by tone added to the stem-final syllable: High tone in third singular verbs, Low tone in third plural verbs, and Mid tone in first and second person verbs. Chapter 10 discusses the clitics of the verb word, including agentive passive, passive, object and dative bound pronouns, imperfect, perfect, subordinate, and relative clause definite marker clitics.

Clause-level syntax is presented in chapter 14 to show the functions of morphemes. Agentive passive, passive, antipassive, and causative morphemes are syntactically distinguished in a section on verbal valency. Non-verbal clauses with two sets of copulas are compared. Relative clauses, noun phrase agreement, and possession are also discussed, among other grammatical aspects. Chapter 15 presents sentence-level syntax, including coordinate and subordinate conjunctions, question clauses, and subject and object focus. After some concluding remarks in chapter 16, ten texts of various genres are presented in chapter 17 to verify the morphology and syntax in the context of natural language.

All data represent both underlying and surface (phonetic) forms unless otherwise marked. Where they differ, surface forms are written between brackets [], whereas underlying forms are written between forward slashes /. Many of the clause examples are taken from the ten texts of chapter 17, which have reference codes. Throughout the thesis, examples from these texts list the reference code and line number in the free gloss from which the examples are taken. Pronouns, as in *ūgg ŋəlg* ‘your (2pPp) necks,’ have a different set of gloss abbreviations than other word categories (see the list of abbreviations and the discussion on possessive pronoun abbreviations in 5.1).

Example numbers are indicated with parentheses such as (3), whereas rules are indicated with braces such as {M3}. In 3.3, rule {M4} states that [+round] quality spreads rightward from the root to all suffix vowels not underlyingly specified for the feature [round]. However, roundness does not spread as specified in every word with every speaker, but tends to vary from word to word and from speaker to speaker. In this thesis, morphemes are transcribed as having the most possible rounding.

2 Phonology

2.1 Consonants

Gaahmg has 21 consonant phonemes as shown in table 1. There is contrastive length for fricatives, nasals, lateral, and rotic phonemes, but not for other consonant phonemes.

Table 1: Consonant Phonemes

	Labial	Dental	Alveolar	Palatal	Velar
Vl. Plosives	p	t	t	c	k
Vd. Plosives	b	d	d	ɟ	g
Fricatives	f, f:		s, s:		
Nasals	m, m:		n, n:	ɲ, ɲ:	ŋ, ŋ:
Laterals			l, l:		
Rotics			r, r:		
Approximants	w	ð ¹		y ²	

2.1.1 Consonant articulation

Gaahmg dental and alveolar plosives are contrastive. Dental plosives are made with the tongue tip touching the back of the upper teeth. The articulation of the alveolar plosive tends to vary from person to person between alveolar and retroflex. The plosive is produced with the tongue tip or the underside of the tongue tip touching the alveolar ridge or slightly behind the alveolar ridge. The phoneme [r] is a flap, but when lengthened [r:] is realized as a trill.

The phoneme /ð/ deserves special attention. It is best described as a dental approximant since the tongue does not necessarily touch the teeth, although it can protrude out of the open mouth between the teeth. The articulation is most similar to that of the IPA [ð] but has less friction.

2.1.2 Consonant contrasts

2.1.2.1 Phonetically similar contrasts

The consonants are considered to be phonemic based on the minimal and near minimal pairs of (1) in which phonetically similar consonants are contrasted. Root-final velar consonants are written in parentheses to indicate that they do not surface.

¹ The interdental fricative symbol {ð} is used to represent the dental approximant phoneme.

² The symbol {y} is used instead of the IPA symbol {j}.

(1) **Consonant contrasts**

p - b	pāḍá(g)	'rope material'	báḍà	'gourd bowl'
p - f	páré(g)	'leather bag'	fárṇá(g)	'bird type'
p - w	páásèè	'basket type'	wáásāā	'stone type'
b - m	bòḍl	'ground crack'	mòḍl	<i>village name</i>
b - w	bāár	'tribe member'	wāár	'insect type'
m - w	mīḍ	'stone'	wīḍ-ḍ	'breast'
m - n	māāng	'disagreement'	nāāṇḍ	'day'
f - w	fīḍ	'feather'	wīḍ-ḍ	'breast'
t - ḍ	tṣṣr	'larynx'	ḍòṣr	'animal fence'
t - t	téèr	'carving tool'	téèl	'anchor'
t - s	tálḍ(g)	'tax'	sálṣ(g)	'army ant'
ḍ - d	ḍòṣr	'animal fence'	dṣṣr	'hammer'
ḍ - n	ḍórsó	'tumor'	nōrnó	'saliva'
ḍ - l	ḍéèl	'lake'	léèl	'grass (GEN.)'
ḍ - r	ḍùḍ-ḍ	'year'	rùḍ-ḍ	'perennial stream'
ḍ - ð	ēēḍ	'eye'	mēēð	'tree type'
	cēḍán	'illness type'	mēðān	'youth leader'
t - d	téèl	'anchor'	dèèl	'collar bone'
t - s	téèl	'anchor'	séèn	'ruler'
d - n	dóól	'tree type'	nōnḍ	'demon'
d - l	dèèl	'collar bone'	léèl	'grass (GEN.)'
d - r	dōwə	'bean type'	rəðwə	'net'
d - ð	dōd	'stork'	jááð	'old clothing'
s - ð	āwēēs	'bird type'	lēēð	'planting drill'
n - l	nōnḍ	'demon'	lōnḍ	'tree type'
n - r	nāān-ḍ	'day'	rāāē	'quarrel'
n - j	nāān-ḍ	'day'	nāāṇ	'crocodile'
n - ŋ	nāms	'food, eating'	ṇālg	'neck'
l - r	ḍéèl	'lake'	ḍèèr	'leech'
c - j	cāā	'cooking stone'	jāā	'boy, son, person'
c - y	cāā	'bath'	yāàð	'sister'
j - j	jāā	'boy, son, person'	nāā	'girl, daughter'
j - y	jááð	'ragged clothes'	yāàð	'sister'
j - y	nāāṇ	'crocodile'	yāām	'bride'
j - ŋ	jááfār	'mustache'	ṇáásāā	'tree type'
k - g	káál	'house fence'	gāāl	'falcon'
k - w	káár	'stew'	wáár	'insect type'
g - ŋ	gārṇè	'dung'	ṇārṇá(g)	'leach'
g - w	gāā	'pumpkin type'	wāā	'water'

2.1.2.2 Consonant length contrasts

There is little, if any, phonetically contrastive length of plosives in any environment. The same is true for the approximants /w/, /ð/ and /y/. Although plosives and approximants have little if any contrastive length, fricatives and other sonorants are contrastive for length in intervocalic position of a few nouns, such as those in (2).

(2) Intervocalic consonant length contrasts

f - ff	áfáɖ	‘blood’	cáffá(g)	‘side (of body)’
s - ss	básár	‘dried food’	bässà-ɖ	‘large intestine’
m - mm	sāmáj	‘sorghum storehouse’	ṭámmál	‘chair’
ɲ - ɲ	də̀ɲdər-g	‘unable to speak (ADJ.PL)’	ɲēɲēṛās	‘full (ADJ.PL)’
ŋ - ɲŋ	jíŋ-íɖ	‘louse’	ɲŋdər	‘lyre’
r - rr	kāráábbá	‘troublesome (ADJ)’	pārrās	‘full (ADJ)’
	[kāráábbá]			
l - ll	wíli(g)	‘stone name’	ṭílli(g)	‘tree, flower’

2.1.3 Consonant rules

Final consonants pose a challenge in Gaahmg. In (3), root-final consonants in three different verb forms sometimes surface in three different ways. Root-final consonants are word-final in the incomplete (INCP), intervocalic in the past continuous (CONT.P), and in a third environment in the deictic completive (COMP.D).

(3) Final consonants in various environments (Presented in surface form)

	3sN	3sN	3sN	
	INCP	CONT.P	COMP.D	
(a)	àḑ	àw-án	àb-ágā	‘sit’
(b)	káé	káy-án	káj-ágā	‘bring’
(c)	cīi	cī-ón	cīg-ógō	‘wear’
(d)	cūɖ	cūɖ-ón	cūɖ-úgū	‘climb’
(e)	lǝf	lǝf-án	lǝf-ǝgō	‘do magic’
(f)	lās	lās-án	lās-ágā	‘roll-up’
(g)	ɲām	ɲām-án	ɲām-ágā	‘break’
(h)	gǝn	gǝn-án	gǝn-ǝgō	‘grab’
(i)	gùɲ	gùɲ-ón	gùɲ-úgū	‘agree’
(j)	māl	māl-án	māl-ágā	‘gather’
(k)	wēr	wēr-án	wēr-ágā	‘watch’
(l)	ɲáó	ɲáw-án	ɲáw-ágā	‘request’
(m)	kóé	kóy-án	kóy-ógō	‘cook’
(n)	fěð	fěð-án	fěð-ágā	‘release’
(o)	pāā	pā-án	pā-ǝágā	‘guard’

The root-final consonants of (3a-b) surface in three different ways, and the final consonants of (c, l, m) surface in two different ways. A root with final vowel is given for comparison in (o).

In (3a-c), the root-final consonants surface differently in the two environments of the past continuous and deictic completive. To account for these differences, we propose that the root-final consonant in the deictic completive becomes underlying geminate through suffixation. The deictic completive suffix is analyzed as *-CAggA*, where *C* is a consonant with the same features as the root-final consonant³ and *A* is a back vowel taking the [ATR] and [round] features of the root. The suffix causes the root-final consonant to be underlying doubled, but a degemination process causes the geminates to surface with little, if any, phonetically contrastive length. The past continuous form has the suffix *-An*, where *A* is an unrounded back vowel and takes the [ATR] value of the root. Thus, the root-final consonant weakens in the past continuous form with intervocalic environment, but not in the deictic completive form where it is underlying geminate through suffixation.

In (3a-c, l-m), the root-final consonants also surface differently in the word-final environment of the incomplete compared with the environment of the deictic completive. We analyze the root-final consonants in these verbs to weaken to vowels word-finally.

The verb forms of (3) are re-presented in (4) with the proposed underlying form on the left and underlying geminates represented in the deictic completives. The surface form is given in brackets to show where it differs from the underlying form.

(4) **Final consonants in various environments re-presented**

	UR	3sN	3sN	3sN		
		INCP	CONT.P	COMP.D		
(a)	/ab/ L	àṽ	àw-án	àb-bāggā	[àbāgā]	‘sit’
(b)	/kaʃ/ H	káé	káy-án	káʃ-ʃāggā	[káʃágā]	‘bring’
(c)	/cig/ M	cīi	cī-ón	cīg-góggō	[cīgógō]	‘wear’
(d)	/cuḍ/ M	cūḍ	cūḍ-ón	cūḍ-ḍúggū	[cūḍúgū]	‘climb’
(e)	/lɔf/ L	lǝf	lǝf-án	lǝf-fǝggō	[lǝfǝgō]	‘do magic’
(f)	/las/ M	lās	lās-án	lās-sāggā	[lāságā]	‘roll-up’
(g)	/nam/ M	nām	nām-án	nām-māggā	[nāmágā]	‘break’
(h)	/gɔn/ L	gòn	gòn-án	gòn-nǝggō	[gònǝgō]	‘grab’
(i)	/guɲ/ L	gùɲ	gùɲ-ón	gùɲ-nǝggū	[gùɲnǝgū]	‘agree’
(j)	/mal/ M	māl	māl-án	māl-lāggā	[mālágā]	‘gather’
(k)	/wer/ M	wēr	wēr-án	wēr-rāggā	[wērágā]	‘watch’
(l)	/naw/ H	náo	náo-án	náo-wāggā	[náoágā]	‘request’
(m)	/kɔy/ H	kóé	kóy-án	kóy-yóggō	[kóyógō]	‘cook’

³ However, *C* becomes *ɟ* when attached to a root-final vowel as in *pā-ɟāggā* ‘guard’.

	UR	3sN	3sN	3sN		
		INCP	CONT.P	COMP.D		
(n)	/fɛð/ H	fɛð	fɛð-án	fɛð-ðággā	[fɛðágā]	‘release’
(o)	/pa/ M	pāā	pā-án	pāð-ðággā	[pāðágā]	‘guard’

The root-final plosives /b/, /ʃ/ and /g/ of (4a-c) surface in the deictic complete, but are weakened word-finally in the incomplete form, and intervocalically in the past continuous form. Similarly, the approximants /w/ and /y/ of (1-m) are weakened word-finally in the incomplete form. The bilabial and palatal plosives of (a-b) weaken to corresponding approximants intervocalically (/b/ becomes [w] in *âw-ân*, /ʃ/ becomes [y] in *káy-ân*). Thus we have the rule of {P1a}, where P represents a phonological rule. The plosives /b/, /ʃ/ of (a-b) and approximants /w/ and /y/ of (1-m) weaken to corresponding vowels word-finally (/b/, /w/ become [ɔ] or [u], and /ʃ/, /y/ become [ɛ] or [i], depending on the [ATR] quality of the preceding vowel). Thus we have the rule of {P1b}. The dental plosive /d/ of (d) does not weaken intervocalically or word-finally, and the alveolar plosive /d/ is not attested root-finally in verbs.

{P1} Bilabial and palatal weakening

- (a) /b/, /ʃ/ are weakened intervocalically to approximants.
- (b) /b/, /ʃ/, /w/, /y/ are weakened word-finally to vowels with the same [ATR] quality as the preceding vowel.
- (c) /w/, /y/ before word-final sonorants are weakened to vowels with the same [ATR] quality as the preceding vowel.

As will be evident from the distribution of word-final consonant clusters in 2.1.4.2, all word-final consonant sequences are sonorant-obstruent in surface form. Therefore, as stated in {P1c}, /w/, /y/ are weakened before word-final sonorants. In this way, word-final sonorant-sonorant consonant sequences are avoided. For example, the *ɔ* of *càðr* ‘rabbit’ and the *ɛ* of *gðēn* ‘metal worker’ could underlying be *w* and *y* respectively, but are weakened to vowels in the surface form.

The velar plosive /g/ of (4c) is weakened to elision as stated in {P2}.

{P2} Velar plosive elision

- /g/ is elided both inter-vocalically and word-finally when following a vowel.

Since all word-final consonant sequences are sonorant-obstruent in surface form as will be discussed in 2.1.4.2, the contrast between plosives and approximants is neutralized in the first of the two consonant positions. Therefore, there is also the rule of {P3}.

{P3} Plosive weakening

Plosives are weakened to approximants when they immediately precede word-final obstruents and follow vowels.

For example, the *w* in *dāwɔ* ‘fertile soil’ and *y* in *kāyɔ* ‘cup, spoon’ could underlyingly be *b* and *ɟ* respectively, but weaken to sonorants in the surface form. Rules {P1-P3} apply throughout the language in roots and when bound morphemes are attached.

2.1.3.1 Underlying and surface representations of plosives

In this section, we discuss the neutralization of plosives in various environments. The chart of (5) summarizes the plosive changes mentioned in this section, which are illustrated with examples in the following sections. The environments are as follows: word-initial B, intervocalic V, either consonant in a consonant sequence -C₁C₂-, word-final before an obstruent CC_[son]#, word-final E. A dash indicates the underlying phoneme has not been attested to surface in the environment. An empty slot indicates the phoneme cannot be confirmed to surface in the environment.

(5) Plosive realizations in various environments

UR		B	V	-C ₁ C ₂ -	<u>CC</u> _[-son] #	E
p	→	p				
t̥	→	t̥				
t	→	t				
c	→	c				
k	→	k				
b	→	b	w	-	w	ɔ, u
ɖ	→	ɖ	ɖ	ɖ	ð	ɖ
d	→	d	d	d	-	d
ʃ	→	ʃ	y	ʃ	y	ɛ, i
g	→	g	Ø	g	-	Ø
b:	→		b			b ^ɹ
ɖ:	→		ɖ			ɖ ^ɹ
d:	→		d			-
ʃ:	→		ʃ			ʃ ^ɹ
g:	→		g			g ^ɹ

Voiced and voiceless plosives

Voiced and voiceless plosives surface word-initially. Voiceless plosives do not surface in any other environment. There is neutralization between voiced and voiceless plosives in consonant sequences, as plosives are always voiced in this environment—either in word-medial or word-final consonant sequences.

Voiced plosives and approximants

As the bilabial and palatal weakening rule of {P1} indicates, there is neutralization between the plosives /b/, /ɟ/ and approximants /w/, /y/ intervocalically {P1a}. There is neutralization between the plosives /b/, /ɟ/ and vowels /ɔ, u/, /ɛ, i/ word-finally {P1b}. The velar plosive /g/ is elided intervocalically and word-finally {P2}, but otherwise surfaces. As the plosive weakening rule of {P3} indicates, there is neutralization between plosives and corresponding approximants for the first consonant of a word-final consonant sequence. The dental and alveolar plosives /t̪/, /d/ surface the same as their underlying forms in all other environments.

Geminate plosives /bː/, /ɟː/, and /gː/

There is no phonetic contrast of length for any plosive in any environment. As will be discussed in section 2.1.3.2, the underlying geminate plosives /bː/, /ɟː/, and /gː/ are realized as single, devoiced unreleased plosives word-finally, and are realized with little or no lengthening intervocalically. Since the non-geminate plosives /b/, /ɟ/, and /g/ surface as weakened in the same environments that their geminate equivalents surface as single plosives, they are never in contrast.

Geminate plosives /t̪ː/ and /dː/

The plosives /t̪/ and /d/ are not weakened intervocalically or word-finally, but also never surface with contrastive length. Intervocalically, the underlying geminate equivalents /t̪ː/ and /dː/ surface with little or no length. Word finally, the dental geminate /t̪ː/ surfaces the same as for the other geminate plosives—as a single devoiced unreleased plosive, but is released elsewhere. The alveolar geminate plosive /dː/ is not attested word-finally.

Voiceless plosives and voiced geminate plosives

Voiceless plosives are not attested anywhere except word-initially and are in complementary distribution with voiced geminate plosives which cannot be confirmed word-initially. Thus, voiceless plosives could possibly be analyzed as underlying geminate plosives in word-initial position. In this analysis, there would be no underlying voicing contrast in plosives, but only a length contrast⁴.

In this thesis, word-initial plosives are written as voiceless plosives since they surface as such. Underlying geminate plosives in word-final and intervocalic

⁴ Or, since consonant clusters are not attested word-initially, an alternative analysis would be that geminate plosives are fortis ('strong') consonants and non-geminate plosives are lenis ('weak') consonants.

position are written as voiced geminate plosives, and the reader should assume that all such voiced geminate plosives surface with little or no contrastive length.

2.1.3.2 Plosive distribution

Voiceless plosives surface at the beginnings of words, but not in other environments.

(6) Voiceless plosive distribution

	Beginning	
p	púr	‘flower’
t̥	t̥ēē-d̥	‘road, path’
t	tēēnd̥	‘riddle’
c	cééʃ	‘lame person’
k	kābbàr [kābàr]	‘wing, armpit’

Voiced plosives surface at the beginnings of words and in consonant sequences. The phonemes /ɟ/ and /g/ occur as the first or second segment of consonant sequences, /d̥/ and /d/ only occur as the second segment of sequences, and /b/ is not attested in any consonant sequence.

(7) Voiced plosive distribution

	Beginning		Consonant sequence	
b	bààð	‘father’	----	
d̥	ðii	‘rat’	móf̥d̥ēē	‘snake type’
d	d̥ʃólàfàà	‘wolf’	kágdàr	‘food type’
ɟ	ɟìd̥	‘husband’	bàɟwáár	‘bird type’
			d̥óggd̥l̥jā [d̥óggd̥l̥jā]	‘ankle’
g	gèmmūr	‘dove’	bāggd̥àrs	‘lizard type’
			ɟórgāāl	‘bird type’

When the plosives [b], [ɟ] and [g] surface in intervocalic and word-final position, they are underlyingly geminate even though they surface with little or no contrastive length. If they were not geminate, they would be weakened to approximants and vowels in these environments. They are realized as single, devoiced unreleased plosives word-finally, and are realized with little or no length intervocalically.

(8) Geminate voiced plosive distribution

	Intervocalic		Final	
bb	lābbù(g) [lābù]	‘navel’	ɟílàbb [ɟílàb̥]	‘water spring’
ɟɟ	cīɟɟí [cīɟí]	‘diarrhea’	bìmìrɟɟ [bìmìrɟ̥]	‘bird type’
gg	dāggár [dāgár]	‘tortoise’	gāágg [gāág̥]	‘bird type’
d̥	fāád̥àr	‘nostril’	d̥àid̥ [d̥àid̥̥]	‘scorpion’

	Intervocalic		Final	
d	cēḏán ⁵	‘illness type’	dṣd [dṣḏ]	‘bird type’

The voiced plosives /ḑ/ and /d/ never surface with contrastive length and are not weakened intervocalically or word-finally. Therefore there is no evidence for the voiced plosives /ḑ/ and /d/ to be geminate underlyingly, except for the dental plosive in root-final position of certain verb forms through morphology. As seen in the verb *cūḑ-ḏúggū* [*cūḏúggū*] ‘climb-COMP.D’ of (4), the geminate plosive *ḑ*: surfaces in verb forms with little or no contrastive length.

For the remaining data of this thesis, underlying geminate plosives are written without a phonetic realization, but can be assumed to surface with little or no contrastive length.

2.1.3.3 Underlying and surface representations of other consonants

Fricatives and sonorants surface word-initially, intervocalically, word-finally, and in consonant sequences, with the exception of the dental approximant /ḏ/, which does not surface word-initially, and the approximants /w/ and /y/ which do not surface word-finally. As the rule of {P1c} indicates, the contrast between the approximants /w/, /y/ and vowels /ɔ, u/, /ε, i/ is neutralized before a word-final sonorant. This is because only sonorant-obstruent consonant sequences are allowed to surface word-finally, as will be discussed in section 2.1.4.2. As was shown in section 2.1.2.2, length is contrastive for fricatives, nasals, lateral, and rhotic phonemes intervocalically in a handful of nouns. These surface forms are summarized in the chart of (9) and examples are given in the following section.

(9) Fricative and sonorant realizations in various environments

UR		B	V	-C ₁ C ₂ -	CC _[-son] #	CC _[+son] #	E
f	→	f	f	f	-		f
s	→	s	s	s	-		s
m	→	m	m	m	m		m
n	→	n	n	n	n		n
ɲ	→	ɲ	ɲ	ɲ	ɲ		ɲ
l	→	l	l	l	l		l
r	→	r	r	r	r		r
w	→	w	w	w	w	ɔ, u	ɔ, u
ḏ	→	-	ḏ	ḏ	ḏ		ḏ
y	→	y	y	y	y	ε, i	ε, i

⁵ Or *cēḏán*

UR		B	V	-C ₁ C ₂ -	CC _[-son] #	CC _[+son] #	E
f:	→		f:				
s:	→		s:				
m:	→		m:				
n:	→		n:				
ɲ:	→		ɲ:				
ŋ:	→		ŋ:				
l:	→		l:				
r:	→		r:				

2.1.3.4 Fricative and sonorant distribution

Fricatives and sonorants are attested in five word positions with few exceptions: /y/ and /ð/ are not attested as the second of a consonant sequence, /ð/ is not attested at the beginnings of words, and /y/ and /w/ do not surface word-finally. The sonorants *w* and *y* in *lɛwɔ́á* ‘animal (gen.)’ and *kàymà* ‘lucky stone’ can also be interpreted as the vowels *ɔ* and *ɛ*. In section 2.3.5, it is discussed how there is no strong evidence for these phonemes being analyzed as vowels or glides in this environment.

(10) Fricative and sonorant distribution

f	B	fɛgg	‘water’	s	B	sīnd	‘guest’
	C ₁	mófdɛē	‘snake type’		C ₁	rōslūumàà	‘praying mantis’
	C ₂	sáárfāā	‘rat’		C ₂	dérsá	‘sweat’
	V	áfáɖ	‘blood’		V	kāsá	‘boy’
	E	gàf	‘give INCP’		E	kōs	‘chair’
m	B	málò	‘beeswax’	n	B	nōrnóó	‘saliva’
	C ₁	sīmɔ̀əgg	‘salve (N.PL)’		C ₁	ənsò	‘plate’
	C ₂	gòrmù-d	‘insect type’		C ₂	nōrnóó	‘saliva’
	V	lāmāɲ	‘knot’		V	gəbbəniɖ	‘tribal name’
	E	áám	‘bone’		E	séèn	‘ruler’
ɲ	B	ɲāāɲ	‘crocodile’	ŋ	B	ɲárēmàà	‘spirit type’
	C ₁	tùggùùɲfāā	‘tree type’		C ₁	bòòɲmà	‘insect type’
	C ₂	bèrɲáò	‘tomato’		C ₂	tílŋó(g)	‘seed, chain’
	V	kāɲāàɖ	‘bowl’		V	áné(g)	‘elephant’
	E	lún	‘boomerang’		E	ɖāɲ	‘courtyard’
r	B	rə̀əwə̀	‘net’	l	B	lōfò	‘magic’
	C ₁	ə̀rɲə̀-d	‘insect type’		C ₁	wīlmāā	‘ant type’
	C ₂	tɛgrélfāā	‘bird type’		C ₂	kūūrlúúgg	‘rodent’
	V	kūūri	‘circle’		V	búlíɲ	‘worm’
	E	ɖáár	‘throne’		E	bāāl	‘instrument’

Fricative and sonorant distribution (continued)

w	B	wéé(s)	‘house’	y	B	yāàm	‘bride’
	C ₁	lēwḍá	‘animal’		C ₁	kàymà	‘lucky stone’
	C ₂	bàɣwáár	‘bird type’		C ₂	-----	
	V	rèèwə	‘net’		V	íyóó	‘oil, fat’
	E	-----			E	-----	
ð	B	-----					
	C ₁	gəððəg ⁶	‘thief’				
	C ₂	-----					
	V	áðá	‘dog’				
	E	ṭààð	‘door’				

2.1.4 Consonant distribution in consonant sequences**2.1.4.1 Consonant sequences across syllable boundaries**

There are few restrictions on non-geminate consonant sequences across syllable boundaries (-C₁-C₂-). The coda of a previous syllable (C₁) may be an obstruent or sonorant, nasal or oral, voiced or voiceless. The same is true of the onset of the following syllable (C₂). Additionally, consonants may be both obstruent or both sonorant, both nasal or both oral, and both may be voiced. Further, the consonants may have opposite corresponding values (C₁ = obstruent, C₂ = sonorant; C₁ = nasal, C₂ = oral; C₁ = voiceless, C₂ = voiced; opposite orders of each values as well). However, only fricatives can be voiceless in consonant sequences, and there are no attested voiceless-voiceless sequences except in compound words such as *fě́t-ḥā* ‘person name (person.name-place)’.

All attested consonant sequences across syllable boundaries are listed in (11), which is divided into sequences with and without nasal consonants. The sonorants *w* and *y* in *kāwḍá* ‘ear wax’ and *kàymà* ‘lucky stone’ can also be interpreted as the vowels *ɔ* and *ɛ*.

(11) Sequences with nasal consonants

nd	tēndás	‘bird type’	nd	sárəndā	‘tree type’
nd	kándāl	‘tree type’	nd	ɣɪndɪl	‘bird name’
ns	ṭins-əgg	‘asking’	nd	tùggùɪnfàà	‘tree type’
nf	ráánfàà	‘covering (n)’	nm	bððnmà	‘insect type’
ms	ámsá-ḍ	‘dryness’	lm	kóðlmàà	‘tree type’
rn	ṭárná(g)	‘leach’	ld	bðldə(g)	‘medical tool’
rm	gərmū-ḍ	‘tree type’	rd	kərdəl	‘grass type’
rd	gərdə	‘dung’	ym	kàymà	‘lucky stone’

⁶ With some speakers, the underlying approximant /ð/ of *gəððəg* ‘thief’ only surfaces in the plural form *gəððəgg*; with other speakers, it also surfaces in the singular form.

Other sequences

sl	rēslūúmàà	‘preying mantis’	lɔ	cēlɔá	‘charcoal’
fɔ	mófɔēē	‘snake type’	lɔ	bámàlɔā	‘morning star’
rɔ	óɔdàà	‘army’	lg	ɔ́lɔgɔ	‘drum’
rs	ɔ́rsá	‘tumor’	lf	kálɔfɔ	‘jaw’
rl	kúúrlúúgg	‘rodent’	rɔ	kóúrɔ	‘tree type’
ɔw	bàɔwáár	‘bird type’	rg	írgə̀(g)	‘nature’
gɔ	bāgɔárs	‘lizard type’	rf	sáárfāā	‘rat’
gd	kágɔár	‘food type’	wɔ	kāwɔá	‘ear wax’
gr	tēgrēlɔāā	‘bird type’	yɔ	tāyɔá(g)	‘strainer’

2.1.4.2 Consonant sequences word-finally

In word-final non-geminate consonant clusters ($C_1C_2\#$), C_1 is always sonorant and C_2 is always obstruent. Only the obstruents *ɔ*, *ɔ*, *g*, and *s* are attested in the C_2 position. There is partial word-final nasal assimilation in that only homorganic nasals surface before the obstruents *ɔ* and *g*. However, heterorganic nasals surface before the obstruents *ɔ* and *s*.

(12) Sequences with nasal consonants	Other sequences
ms nāms ‘food, eating’	rɔ bə̀rɔ ‘lion’
nɔ fānɔ ‘cheek’	rs jè̀rs ‘hippopotamus’
ng úng ⁷ [úŋg] ‘tear’	lɔ lólɔ ‘facial blemish’
ns wílə̀ns ‘hunting’	lɔ fālɔ ‘tree type’
ɔɔ rə̀ɔɔ ‘mud’	ə̀g gə̀ə̀ə̀g [gə̀ə̀g, ʔ] ‘thief’
ɔɔ bə̀ɔɔ ‘upper hip’	wɔ ɔ́awɔ ‘fertile soil’
ɔɔ lə̀nɔ ‘tree type’	yɔ káyɔ ‘cup, spoon’

The sonorants *w* and *y* in *ɔ́awɔ* ‘fertile soil’ and *káyɔ* ‘cup, spoon’ can also be interpreted as the vowels *ɔ* and *ɛ*. In section 2.3.5, it is discussed how there is no strong evidence for these phonemes being analyzed as vowels or glides in this environment.

Since no sonorant-sonorant consonant sequences are attested word-finally in (12), we assume that these sequences are not allowed. The bilabial and palatal weakening rule of {P1c} in 2.1.3 is based on this constraint. Since no word-final sonorant-sonorant consonant sequences are allowed, /w/ and /y/ before word-final sonorants must be weakened to vowels with the same [ATR] quality as the preceding vowel. The *ɔ* of *cə̀ɔr* ‘rabbit’ and the *ɛ* of *gə̀ɛn* ‘metal worker’ could underlying be *w* and *y* respectively, but weaken to vowels in the surface form.

⁷The underlying nasal *n* of *úng* ‘tear’ surfaces as *ŋ* in the singular form *úŋg* but surfaces as *n* in the plural form *únúgg*.

The plosive weakening rule of {P3} in 2.1.3 is based on the same constraint. Since no word-final sonorant-sonorant consonant sequences are allowed, plosives must be weakened to approximants when they immediately precede root-final obstruents and follow vowels. The *w* in *dāwɔ* ‘fertile soil’ and *y* in *kāyɔ* ‘cup, spoon’ could underlyingly be *b* and *ɟ* respectively, but weaken to sonorants in the surface form.

2.2 Vowels

Gaahmg has six vowel phonemes as shown in table 2. The vowel /ə/ [ɐ] is phonetically low, made in the same place in the mouth as [a], but with advanced tongue root. The phonemes /ɛ/ and /ɔ/ vary somewhat in phonetic value, becoming closer to the values [e] and [o] respectively in long vowels. To a lesser extent, the phonemes /i/ and /u/ also vary in phonetic value, realized closer to [ɪ] and [ʊ] respectively in short vowels. Vowel length is common and can be analyzed as a vowel sequence in the same syllable or as a lengthened version of a short vowel.

Table 2: Vowel Phonemes

	[-round]		[+round]
	[-back]	[+back]	
[+ATR]	i	ə	u
[-ATR]	ɛ	a	ɔ

The two [ATR] sets of phonemes determine the vowel harmony in the language. Only vowels with the same [ATR] value occur together in the same root. Across morpheme boundaries in the same word, [+ATR] quality spreads to all vowels unspecified for [ATR], either from root to bound morpheme or from bound morpheme to root, whereas [-ATR] quality never spreads. In 3.2, [ATR] quality across morpheme boundaries is further discussed.

2.2.1 Vowel contrasts

2.2.1.1 Phonetically similar contrasts

The six vowels are considered to be phonemic based on the minimal and near minimal pairs of (13). The following symbols refer to the specified positions taken by vowels: B is word-initial, M is word-medial, and E is word-final.

- (13) **Vowel contrasts**
- | | | | | | |
|-------|---|-----|---------|-----|-------------------|
| i - ɛ | B | īgg | ‘milk’ | ēēɔ | ‘eye’ |
| | M | cíl | ‘spine’ | cél | ‘dream’ |
| | E | mī | ‘goat’ | nēē | ‘drawing, colour’ |

Vowel contrasts (continued)

ɛ - a	B	ēēɲ	‘back’	áám	‘bone’
	M	ḍēēr	‘leach’	ḍáár	‘throne’
	E	ɲēē	‘drawing, colour’	ɲāā	‘girl, daughter’
a - ɔ	B	áál	‘calf fence/pen’	óól	‘head’
	M	ḍáár	‘throne’	ḍóór	‘animal fence’
	E	máā	‘house’	mōō	‘gunfire’
ɔ - u	B	óól	‘head’	úū-ḍ	‘wasp’
	M	kóól	‘snake type’	kùul	‘ <i>Kulag</i> clan member’
	E	mōō	‘gunfire’	mūū	‘forehead, face’
ə - i	B	əyúú	‘local tooth brush’	íyáá	‘oil, fat’
	M	gə̀ə̀l	‘shield’	jííl	‘cricket’
	E	wōō	‘shade, help’	mīī	‘goat’
ə - ɛ	B	ə́ə́ḍ	‘tree type’	ēēḍ	‘water-carrying net’
	M	ḍə̀ə̀r	‘snake type’	ḍēēr	‘leach’
	E	wōō	‘shade, help’	rēē	‘cotton, thread’
ə - a	B	ə̀ə̀l	‘hyena’	áál	‘calf fence/pen’
	M	ḍə̀ə̀r	‘snake type’	ḍààr	‘eagle’
	E	wōō	‘shade, help’	wāā	‘pond’
ə - ɔ	B	ə̀ə̀l	‘hyena’	óól	‘head’
	M	ḍə̀ə̀r	‘snake type’	ḍóór	‘animal fence’
	E	wōō	‘shade, help’	mōō	‘gunfire’
ə - u	B	ə́ə́ḍ	‘tree type’	úū-ḍ	‘wasp’
	M	ɲə́ə́m	‘chin’	múum	<i>village name</i>
	E	wōō	‘shade, help’	mūū	‘forehead, face’

2.2.1.2 Vowel length contrasts

Short and long vowels occur contrastively in word-initial, word-medial, and word-final positions. However, the short vowel *ɛ* is only attested in word-initial position in pronouns such as *ēggà* ‘they (3pN)’ and *ēgg* ‘their (3pPs, 3pPp)’.

(14) **Vowel length contrasts**

i - ii	B	îlɲ	‘beeswax’	īigg	‘milk’
	M	cîl	‘instrument’	ṭīil	‘tree type’
	E	kūūrī	‘circle’	cùurì	‘sheave’
ɛ - ɛɛ	M	sèn	‘skin illness’	séèn	‘ruler’
	E	móósē	<i>village name</i>	māāsēē	‘root type’
ə - əə	B	ómīī	‘ant type’	ə̀ə̀mōō	‘liver’
	M	sām	‘medicine’	sóám	‘hunter’
	E	kúsá	‘grass type’	būūsàà	‘stone name’

Vowel length contrasts (continued)

a - aa	B	ārāā-ḍ	‘lake’	āārēē	‘grass type’
	M	sāṣ	‘shoe’	sāāḍ	‘grass-cutter’
	E	cēlḍá	‘charcoal’	ālḍáá	‘earth, dust’
u - uu	B	úlḍ	‘grinding stone’	úú-ḍ	‘wasp’
	M	lún	‘boomerang’	lúún	‘water pot’
	E	gēyù	‘grass type’	ēyúú	‘local tooth brush’
ɔ - ɔɔ	B	ṁn	‘meat’	óól	‘head’
	M	kṣr	‘word, speech’	kóól	‘snake name’
	E	málḍ	‘beeswax’	mélṣṣ	‘sugar cane’

2.2.2 Vowel distribution**2.2.2.1 Distribution in word positions**

As shown by the contrasts in (14), six short and six long vowels are attested in word-initial, word-medial, and word-final position. In monosyllabic nouns, phonetically short vowels are not common word-medially; only four are attested word-initially—*íl* ‘horn’, *úlḍ* ‘grinding stone’, *ṁn* ‘meat’, *ālḍ* ‘fox’, and *ṣḍ* ‘wife’; and do not surface word-finally. However, phonetically long vowels are common in monosyllabic nouns: they are most frequent word-medially, then word-finally, and a few occur word-initially. Although vowel length is phonemic, there is neutralization of vowel length word-finally in monosyllabic nouns and verbs. As will be discussed in 2.3.3, vowels are only realized as long in that position. In polysyllabic nouns, short vowels are common in all three word positions, and long vowels are rare word-initially and word-finally.

2.2.2.2 Distribution in noun roots

The distribution of vowels in disyllabic noun roots is given in (15). The [-ATR] vowels (*ɛ*, *ɔ*, and *a*) and the [+ATR] vowels (*i*, *u*, and *ə*) function as distinct sets in roots; the vowels of the [-ATR] set never occur with vowels of the [+ATR] set in the same root.⁸ Within each set, all possible vowel combinations are attested in roots except *i-u*. The word *jìgg-úúl* ‘afternoon’ is a compound and literally means ‘evening-up’.

⁸ The following nouns are believed to be compounds because of mixed sets of [ATR] vowels: *fùlīmāā* ‘insect type always in houses (*māā* ‘house’)', *gāālmṣṣ* ‘tree type (lit. eagle’s claws)', *wílīmāā* ‘ant type (*māā* ‘mother’)', *tùggùṁfāā* ‘tree type (*fāā* ‘release’)', *rṣslūúmāā* ‘bird type (lit. apostle of house)', *tírīmāā* ‘bird type (*tírí(g)* ‘tree type’)', *túúlîfāā* ‘grass type (*fāā* ‘release’)', *tāāsāmī* ‘sorghum type (*tāāsā* ‘ducked’, *mī* ‘chicken’)', *nāāḍi* ‘those (*ḍi* ‘also’)'.

(15) **Vowel distribution in disyllabic nouns roots**

[-ATR]		[+ATR]			
ɛ - ɛ	wɛ̀lɛ̃ɲ	‘sour taste’	i - i	fɪ̀dɪ̃n	‘perfume’
ɛ - a	cɛ̀dán	‘illness type’	i - ə	ʃɪ̀ləbb	‘water spring’
ɛ - ɔ	mɛ̀lɔ̃	‘sugar cane’	i - u	ʝɪ̀gg-úúl	‘afternoon’
a - ɛ	kààdɛ̃l	‘bull’	ə - i	mə̃ɲɪl	‘rainbow, spirit’
a - a	ɬálám	‘malnutrition’	ə - ə	gəmɔ̃l	‘forest’
a - ɔ	pájɔ̃	‘star’	ə - u	gəmũ̀ur	‘dove’
ɔ - ɛ	bórɛ-ɖ	‘eye matter’	u - i	búlɪ̃ɲ	‘worm’
ɔ - a	mòrāā	‘governor’	u - ə	bũ̀ūsə̀ə̀	‘stone type’
ɔ - ɔ	fɪ̀dɔ̃r	‘nose’	u - u	bũ̀ŋúr	‘youth’

2.2.2.3 Distribution in vowel sequences

Vowel sequences may occur in the same syllable (CV₁V₂, CV₁V₂C, or CV₁V₂CC). Only vowels of the same [ATR] set are paired in sequences, as shown in the list of (16). All possible vowel sequences are attesting in roots except *ea*.

(16) **Vowel sequences**

[-ATR]		[+ATR]		
εa	--	iə	ɖĩɔrmə	‘centipede’
εɔ	ɖɛ́ɔl ⁹	iu	díũ-sũ ¹⁰	‘planted (v)’
ae	bàèl	əi	ɬə̀il	‘tree type’
aɔ	cà̀ɔr	əu	gə̀ũlɖə̀	‘fish’
ɔe	gɔ̀ɛn	ui	bũil	‘moisture’
ɔa	gɔ̀à-ɖ	uə	bũə	‘tree type’

Vowel sequences may not exceed two vowels, and long vowels do not occur in underlying vowel sequences. However, long vowels do occur in surface form vowel sequences such as in *ɲũũ* ‘leopard’, where the underlying final-approximant *y* surfaces as a vowel, in accordance with {P1b} in 2.1.3.

2.3 Syllable structure

2.3.1 Syllable types

The syllable structure may be represented as (C)N(C)(C), where the vowel nucleus

⁹ In *ɖɛɔl*, *bàɛl* and other examples of (16), the vowels *ɔ*, *ε*, and *i* in V₂ position could be analyzed as the glides *w* or *y* if it were not for the fact that sonorant-sonorant sequences are not allowed in word-final consonant clusters.

¹⁰ The root verb is */dĩw/* ‘plant’, but in the completive *díũ-sũ*, *w* becomes *u*, evidenced by the fact that the [+round] quality of *u* is spread to the suffix vowel, which would otherwise be *ə*.

N is the only obligatory constituent of the syllable. The CC codas are only found word-finally and onset-less syllables only word-initially. The nucleus N may be short, long, or a vowel sequence, where long vowels can be analysed as vowel sequences of two short vowels or as lengthened versions of short vowels. The most common syllable types are CN and CNC. The syllable type CNCC commonly occurs in monosyllabic words and word-finally in disyllabic words. Less common syllable types, which only occur word-initially, are N and NC. The syllable type NCC only occurs in monosyllabic words.

In the list of syllable types in table 3, all words are monomorphemic except those with hyphens. The syllable type NCC is not attested with a long vowel except across morpheme boundaries as in *éél-g* ‘stomach’, and the syllable type CNCC is not attested with a vowel sequence except across morpheme boundaries as in *gə̀ūr-d* ‘stomach’.

Table 3: Syllable types (N = syllable nucleus)

	Short	Long	Vowel Sequence
N	ú ‘you 2sN’	ùù ‘air’	ā̄ ¹¹ ‘tree type’
NC	îl ‘horn’	áám ‘bone’	à̀l ¹² ‘brother’
NCC	ā̀d ‘fox’	éél-g ‘stomach’	á̀l̥d ‘cold’
CN	wā ‘no’	wāā ‘pond’	būā ‘tree type’
CNC	fól ‘hole’	ḍēēr ‘leach’	bà̀el ‘perfume’
CNCC	cúld ‘birth sack’	ḵè̀ers ‘hippo’	gə̀ūr-d ‘stomach’

As will be seen in 2.4.3, tone assignment in some disyllabic nouns depends on syllable weight. For this reason, each syllable type is classified according to one of three different weights: light, mid or heavy.

Table 4: Syllable weight of syllable types

Light	Mid	Heavy
V	VC	VVC
CV	VCC	VVCC
	CVC	CVVC
	CVCC	CVVCC
	VV	
	CVV	

¹¹ As discussed in 2.3.6, the word-final vowel *ɔ* in *ā̄ɔ* ‘tree type’ *ɔ* could be interpreted as the glide *w* if it were not for the fact that the definite clitic =*n* for stem-final vowels attaches to this noun (*ā̄ɔ*=*n*) instead of the definite clitic for stem-final consonants =*Á*.

¹² In *à̀l̥*, *bà̀el̥*, the vowels *ɔ*, *ɛ* could be analyzed as the glides *w* or *y* if it were not for the fact that sonorant-sonorant sequences are not allowed in word-final consonant clusters.

Open syllables with short vowels (V and CV) have light weight, closed syllables with short vowels (VC, VCC, CVC, CVCC) and open syllables with long vowels or vowel sequences (VV and CVV) have mid weight, and closed syllables with long vowels or vowel sequences (VVC, VVCC, CVVC, CVVCC) have heavy weight. Although tone assignment in some nouns depends on syllable weight, there are no meaningful restrictions on distribution of syllables in words based on syllable weight.

2.3.2 Syllable structure of polysyllabic words

There are 12 disyllabic syllable structures as shown in (17), including light-light, light-mid, light-heavy, mid-light, mid-mid, and mid-heavy syllable structures. There are no heavy syllables in word-initial position. Consonant clusters do not exceed 2 consonants—either word finally (*-CCC#) or across syllable boundaries (*-CC.C-).

(17) Disyllabic short vowel syllable structures

light-light	V.CV	ũfũ	‘tree type’
light-mid	V.CVC	ásər	‘army’
light-heavy	V.CVCC	órɔ́nd	‘fermented milk’
mid-light	VC.CV	ə́nsə	‘cooking plate’
mid-mid	VC.CVC	ámsáɖ	‘dryness’
mid-heavy	VC.CVCC	ə́ndə̀rs	‘insect type’
light-light	CV.CV	kúsá	‘grass type’
light-mid	CV.CVC	ɬálám	‘malnutrition’
light-heavy	CV.CVCC	ɖũfũrd	‘dust’
mid-light	CVC.CV	cēlɖá	‘charcoal’
mid-mid	CVC.CVC	kágɖər	‘food type’
mid-heavy	CVC.CVCC	bāgɖə̀rs	‘lizard’

Long vowels are common in both first and second syllables of disyllabic words as seen from (18).

(18) Disyllabic long vowel syllable structures

VV.CV	ààsà	‘basket type’
V.CVV	íyá	‘oil, fat’
VV.CVV	ààrēē	‘grass type’
VV.CVC	ə́m̄m̄ɲ	‘yawning’
V.CVVC	āwēēs	‘bird type’
VVC.CV	āāmsá	‘dry, tired (ADJ)’
VC.CVV	àlɖáá	‘earth, dust’
VC.CVVC	ə́ndə́r	‘tree type’
CVV.CV	ɬééfá	‘leaf, liver sickness’

Disyllabic long vowel syllable structures

CV.CVV	gēmàð	‘ant type’
CVV.CVV	māāsēē	‘root type’
CVV.CVC	pééràm	‘flag’
CV.CVVC	mārōōs	‘spider’
CVV.CVVC	tīifǎǎŋ	‘bird type’
CVV.CVCC	bāālàṇḍ	‘stripe’
CV.CVVCC	búlūūrs	‘bird type’
CVVC.CV	bððŋmà	‘insect type’
CVC.CVV	mófǫǫē	‘snake type’
CVVC.CVV	jííldàð	‘tree type’
CVC.CVVC	jórgāāl	‘bird type’

Vowel sequences may not exceed two vowels, and long vowels do not occur in underlying vowel sequences. Vowel sequences are rare in polysyllabic lexemes. The only three attested are listed in (19). In all of these, they occur in an initial CVVC syllable type.

(19) Polysyllabic vowel sequence structures

CVVC.CVV	gōūldàð	‘fish’
CVVC.CV	ḍīǎrmà	‘centipede’
	kòùrǎð	‘tree type’

Three-syllable words are not common—about 5% of monomorphemic nouns. Only the syllable types CN, CNC, and occasionally N occur in three-syllable words. The syllable types CN and CNC may occur in any position of the word.

(20) Three-syllable short vowel syllable structures

CV.CV.CV	tāsāmé(g)	‘grass’
CV.CV.CVC	kàṇàràṇ	‘jackal’
CV.CVC.CV	sàràṇḍā	‘tree type’
CVC.CV.CV	túnḍúli(g)	‘elbow’
CVC.CV.CVC	sàṇḍàlàn	‘tree type’

Long vowels may occur in any syllable of three-syllable words. No more than three syllables in a root have been attested.

(21) Three-syllable long vowel syllable structures

V.CV.CVV	ūṇúràð	‘pumpkin’
CVV.CV.CV	máónimō	‘vegetable type’
CV.CV.CVV	kūsūmíí	‘knee’
CV.CVV.CVV	kūḍúḍíí	‘bird type’

The verb root also has the syllable structure (C)N(C)(C), where the vowel nucleus is

the only obligatory constituent of the syllable and can be short, long, or a vowel sequence. However, at least 90% of verb roots consist of the syllable CVC with short vowel. The other syllable types are rare.

(22) **Root verb syllable types**

VC	/ab/ L	‘sit’
CV	/ba/ M	‘throw’
CVC	/beɪ/ L	‘beat’
CVVC	/maar/ M	‘buy’
	/kœɣ/ L	‘welcome’
CVCC	/gams/ MH	‘find’
CVCVC	/kœŋɔr/ L	‘snore’

2.3.3 Monosyllabic vowel lengthening

The surface syllable structure of Gaahmg requires that all monosyllabic, open-syllable nouns and verbs have long vowels as stated in the rule of {P4}.

{P4} Monosyllabic vowel lengthening

Vowels are realized as long in monosyllabic, opened-syllable nouns and verbs.

Normally, the underlying root vowel of monosyllabic, open-syllable nouns is long. But in nouns such as *ʔɔʔ* / *ʔɔ-gg* ‘cow’ which have a short root vowel, the vowel is realized as long in the singular form. In the plural form with final consonant, the vowel remains short.

In verbs such as *nág-gā* / *nág-dā* ‘sleep.SBJV1sN/.1pN’ with root-final velar plosive, the velar plosive is elided in word-final position of incomplete forms {P2}, as will be discussed in 9.6. The resulting monosyllabic open-syllable verb with underlying short vowel surfaces with a long vowel *nāā* ‘sleep.INCP’.

The lengthening rule of {P4} requires that the minimal surface word for nouns and verbs have at least mid syllable weight. The process does not apply to other parts of speech such as the negative *wá* ‘no, not’ or the adverb *tu* ‘towards, upward’. These adverbs, which are separate words, are discussed in chapter 13.

2.3.4 Nasal clusters and prenasalization

Nasal-obstruent sequences such as in *àndàrs* ‘insect type’ and *ʔĩns-əgg* ‘asking’ are common in the language. They are interpreted as consonant sequences instead of prenasalized obstruents for the following reasons: several unambiguous consonant sequences are attested in 2.1.4.1 including nasal-obstruent sequences, there are no

words beginning with a nasal-obstruent sequence that must count as one unit, there are no three-consonant sequences across syllable boundaries in which a nasal-obstruent sequence must count as one unit, and all word-final nasal-obstruent sequences fit into the proposed syllable type CVCC.

2.3.5 Ambiguous vowel sequences

Vowel sequences before word-medial or word-final consonant sequences such as in the words of (23) are interpreted as vowel sequences in the surface form. The vowels in V₂ position of the sequences cannot be analyzed as glides, since three consonants in a sequence are not allowed.

(23) **V₁V₂C.C- or V₁V₂CC#**

ḍĩármà	‘centipede’
káùrjə	‘tree type’
àər-g	‘priest, chief’
áíld	‘cold (n)’
gəũr-d	‘stomach’

Vowel sequences before root-final sonorants such as in the words of (24) are interpreted as vowel sequences in the surface form. As shown in the distribution of word-final consonant sequences of (12), only sonorant-obstruent sequences are allowed, as in *bə̀rɗ* ‘lion’; word-final sonorant-sonorant consonant sequences (**càwr* ‘rabbit’, **gə̀yn* ‘metal worker’) are not allowed. However, unambiguous vowel sequences such as in *ḍĩármə̀* ‘centipede’ and *bũə̀* ‘tree type’ of (16) are attested. Thus, the vowels in V₂ position of the sequences in (24) are analyzed as vowels.

(24) **V₁V₂C_[+son]#**

càər	‘rabbit’
gə̀ēn	‘metal worker’
tə̀il	‘tree type’

Vowel sequences before root-final obstruents such as in the words of (25) are ambiguous. The vowels in V₂ position of the sequences can be analyzed as glides in the surface form since all other sonorants (*m, n, ɲ, l, r, ʃ*) are unambiguously attested in word-final sonorant-obstruent constructions as shown in (12). They can also be analyzed as vowels in the surface form since all relevant vowel sequences (*aə, eə, ae, əe, əu, iu, əi, ui*) are unambiguously attested in (16). Although there is no strong evidence for one interpretation over the other, such words are listed with vowel sequences in this thesis¹³.

¹³ In (12), the glides are written instead of vowels in order to show the full range of sonorant possibilities in word-final sonorant-obstruent position. Otherwise, vowels are written for this

- (25) $V_1V_2C_{[-son]} \#$
 dāðd ‘fertile soil’
 kǎēð ‘serving spoon’
 dǎid ‘scorpion’

Vowel sequences before root-medial consonants such as in the words of (26) are also ambiguous. The vowels in V_2 position of the sequences can be analyzed as glides in the surface form since all other sonorants are unambiguously attested in word-medial, syllable-final position as shown in (11). They can also be analyzed as vowels in the surface form since all relevant vowel sequences are unambiguously attested in (16). Although there is no strong evidence for one interpretation over the other, such words are listed with vowel sequences in this thesis.

- (26) V_1V_2C-
 kǎēmǎ ‘lucky stone’
 kǎðǎ ‘ear wax’
 fǎēǎ ‘planting seed’

2.3.6 Ambiguous final vowels

Word-final vowel sequences such as in *mǎāð* ‘gazelle’ are underlying vowel-plosive or vowel-approximant constructions which surface as vowel-vowel sequences. The bilabial and palatal weakening rule of {P1b} states that the underlying plosives /b/, /ɟ/ and approximants /w/, /y/ are weakened word-finally to vowels with the same [ATR] quality as the preceding vowel. Unambiguous word-final vowel sequences such as in *būð* ‘tree type’ support this analysis, as does the fact that different allomorphs of the accompaniment and definite clitics attach to stem-final vowels rather than to stem-final consonants.

In (27), singular nouns and their accompaniment and definite forms are given. Accompaniment singular nouns take the clitic = \tilde{E} for surface-final consonant stems as in (a) and the clitic = $n\tilde{E}$ for surface-final vowel stems as in (b-d). The language treats (b-p) as having vowel-final stems and attaches the clitic = $n\tilde{E}$. Similarly, the definite clitic = A for surface-final consonant stems attaches in (a), but definite clitics having final n for surface-final vowel stems attach in (b-p).

There are no noun suffixes with initial consonant which attach to both underlying-final consonants and underlying-final vowels. Therefore, the root-final plosives /b/, /ɟ/, and /g/ never surface as plosives as they do in verbs (/cǎg/, cǎǎ ‘bathe.INCP.3sN’, cǎg-gǎggǎ ‘bathe-COMP.D’). In nouns, there is no way to verify whether the root-final segments are underlyingly /w/ or /b/, /ɟ/ or /y/. However, although the definite

(27) **V₁V₂# in noun forms**

	UR	N SG	ACM	DEF	
(a)	/kaam/ L	kààm	kààm = ē	kààm = ā	‘nyala’
(b)	/waayaa/ H	wááyáá	wááyáá = nē	wááyáá = n	‘bird type’
(c)	/aŋɛ(g)/ H	áŋé	áŋé = nē	áŋé = n	‘elephant’
(d)	/buə/ ML	būə	būə = nī	būə = n	‘tree type’
(e)	/kaw/ HL	káə	káə = nē	káw = àn	‘hyena, root’
(f)	/maaw/ ML	māāə	māāə = nē	māāw = àn	‘gazelle’
(g)	/bew/ ML	bēə	bēə = nē	bēw = àn	‘tree type’
(h)	/ceew/ HM	cééə	cééə = nē	cééw = ān	‘lame person’
(i)	/tay/ ML	tāə	tāə = nē	tāy = àn	‘giraffe’
(j)	/kaay/ M	kāāē	kāāē = nē	kāāy = ān	‘witch doctor’
(k)	/muy/ M	mūi	mūi = nī	mūy = ən	‘wildebeest’
(l)	/puuy/ ML	pūūi	pūūi = nī	pūūy = ən	‘leopard’
(m)	/buu/ L	bùù	bùù = nī	bùù. = ùn	‘chicken coop roof’
(n)	/rɛɛ/ M	rēē	rēē = nē	rēē. = ēn	‘cotton’
(o)	/tɔɔ/ H	tóó	tóó = nē	tóó. = ón	‘cow’
(p)	/jũ/ ML	jūi	jūi = nī	jūi. = ìn	‘turkey’

clitic distinguishes surface-final vowel stems from surface-final consonant stems, it also distinguishes underlying-final approximant (or plosive) stems from underlying-final vowel stems. The definite clitic = *An* attaches to stems with underlying-final approximants in (e-l), and the definite clitic = *Vn* with copied vowel from the stem attaches to stems with underlying-final vowels in (m-p). Thus, the singular nouns of (e-l) have underlying-final approximants or plosives, but surface-final vowels.

2.4 Tone

There are three underlying level tones in Gaahmg illustrated by the words of table 5.

Table 5: Contrastive H, M, and L tones

H	óór	‘tree bark’
M	ǝǝr	‘anger’
L	ə̀ər	‘sheep’

Rising and falling tone is analyzed as a sequence of two level tones. The level tones combine and result in nine tone melodies which are all contrastive in the same monosyllabic syllable type—three level, three falling, and three rising. The same, as well as additional tone melodies, are contrastive in disyllabic syllable patterns.

Unlike some African tone languages, tone is not affected by consonants, tone is stable—it does not shift from one syllable to another, and tone does not down-step or down-drift. The functional load of tone is very high, both in the distinction of words and in the expression of grammatical functions.

The tone bearing unit is the syllable. In roots with fewer tones than the number of syllables, such as in three-syllable nouns with two tones, tone is assigned right-to-left, regardless of syllable weight. However, when there are more tones than syllables, such as in disyllabic roots with three-tone melodies, two tones are assigned to the heaviest syllable, and the remaining tone is assigned to the other syllable.

In roots, no more than one tone may be assigned on light syllables and generally no more than two tones may be assigned on mid or heavy syllables. However, as will be seen in 7.6.2, two tones (HM) are assigned to the accompaniment clitic =*Ê* which is a light syllable. And as will be seen in 9.8.6, three tones (MHM) are assigned to the continuous past suffix *-Ān* which is a mid syllable. Nevertheless, no more than three tones are ever allowed on any one syllable.

2.4.1 Tonal contrasts in the same syllable structure

The words in (28) have contrastive tone melodies for the specified syllable structures. Three level, three falling, and three rising tone melodies are attested in the CVVC syllable type. There is also one attested monosyllabic root with three tones (*ḍūl* ‘instrument’). The same tone melodies and additional tone melodies are attested in disyllabic syllable patterns, although not all in the same syllable pattern. The singular suffix *-ḍ* of *nī-ḍ* ‘tooth’ and of several other nouns in (28) does not add tone, as will be discussed in section 6.3.1. The contrasts support the claim of there being minimally three underlying tones in the language.

(28) Tonal contrasts in the same syllable structures

	CVVC		CVCVVC		CVCVC	
H	póór	‘boat’	wéráá-ḍ	‘clan member’	básár	‘dried food’
M	bāāl	‘cave’	kālāā-ḍ	‘tongue’	ṭēḍēl	‘bird type’
L	dēèl	‘collar bone’	sēṇàā-ḍ	‘instrument’	ḍìrìm	‘tree type’
HL	sēèn	‘ruler’	---		fīḍìn	‘perfume’
HM	nī-ḍ	‘tooth’	---		bórē-ḍ	‘eye matter’
ML	bēèl	‘metal’	gōmūūr	‘dove’	mōsōr	‘horse’
LH	ḍóór	‘fence’	mōḍáál	‘hatred’	---	
LM	ḍēēr	‘leach’	bārōōl	‘cistern’	gēmōl	‘forest’
MH	būúl	‘bread’	sēwéél	‘tree type’	cēyám	‘tobacco’
HLH	---		rúnūú-ḍ	‘bird type’	---	
HLM	---		mōḍūūl	<i>village name</i>	---	
HMH	---		lúlīḍ	‘snake type’	---	
LHL	ḍūúl	‘instrument’	bàsáār	‘lie’	bàḍāl	‘job-less person’

Although there are at least nine contrastive tone melodies in noun roots, verb roots may only have the seven underlying tone melodies of (29). The only verb roots

attested to have HM melody are *bél-l* ‘name, call’ and *léē* ‘come, arrive’, and the only verbs attested to have ML melody are *dṣḏs-s* ‘stand’, *būp-ḏ* ‘make big’. The infinitive verb form is analyzed to reveal the underlying root tone.

(29) **Tonal contrasts in infinitive verb forms**

	Root tone	INF	
(a)	H	fír-r	‘smell, pray’
(b)	M	cōr-r	‘help’
(c)	L	ḏùr-r	‘bury’
(d)	HL	pêr-r	‘attach’
(e)	HM (rare)	bél-l	‘name, call’
(f)	ML (rare)	dṣḏs-s	‘stand’
(g)	MH	kṣḏ-ḏ	‘strike, ram’

2.4.2 Tone distribution

Level tone

Level tone appears in syllable types regardless of syllable weight. In (30), syllable types are grouped together according to light, mid, or heavy syllable weight. High, Mid, and Low tone occur on each of the six syllable types with both long and short vowels, with the exception of High on the syllable type VV. The singular suffixes

(30) **Level tone distribution in six syllable types with both short and long vowels**

	V- (light)	VC- (mid)	VCC (mid)
H	íyṓṓ ‘oil, fat’	órḏàà ‘army’	úlḏ ‘grinding stone’
M	ūrīī ‘ostrich’	āldáá ‘earth’	ālḏ ‘fox’
L	ṣsáà ‘pillow’	èrṇṇ-ḏ ‘insect’	àrs ‘tree type’
	CV- (light)	CVC (mid)	CVCC (mid)
H	ḏíni ‘world’	cíl ‘spine’	célḏ ‘local broom’
M	kāsá ‘boy’	mēl ‘tree type’	kōrḏ ‘bird type’
L	fērī <i>hill name</i>	ḏàl ‘pot’	fālḏ ‘tree type’
	VV- (mid)	VVC (heavy)	VVCC (heavy)
H	---	áám ‘bone’	éél-g ‘stomach’
M	ṓōrī ‘angry person’	ēēḏ ‘net type’	īīg ‘milk’
L	ààsà ‘basket’	ḏḏl ‘hyena’	ààr-g ¹⁴ ‘priest, chief’
	CVV- (mid)	CVVC (heavy)	CVVCC (heavy)
H	wááyáá ‘bird type’	póór ‘boat’	dóólḏ ‘tree type’
M	lēērṓṓ ‘reed’	bāāl ‘cave’	bāār-ḏ ‘abdomen’
L	fāṇṇḏḏ ‘sorghum type’	dèèl ‘collar bone’	jèèrs ‘hippopotamus’

¹⁴ There are two singular forms *ààr*, *ààrg* and the plural form is *ààrēēg*.

-d, *-g* of *əɾŋə-d* ‘insect’, *éél-g* ‘stomach’ and of other roots of (30) do not add tone, as will be discussed in section 6.3.1.

Falling and rising tone

Falling and rising tone only appear in roots on syllable types with mid and heavy weight. As shown in (31), falling and rising tone does not occur on the open syllable types V and CV with light weight. It has not been attested on VVCC syllables. Falling and rising tone is common on CVVC, CVVCC, CVC and CVV syllables, and rare in VC, VCC, VV, VVC and CVCC syllables. Other than in the word *ɖùùl* ‘instrument’, three tones on the same syllable in monomorphemic roots is not attested.

(31) Falling/rising tone distribution in various syllable types

	V- (light)	VC (mid)	VCC (mid)
HL	---	îl ‘horn’	îlɟ ‘beeswax’
	CV- (light)	CVC- (mid)	CVCC (mid)
HL	---	kâlɬɔ ‘jaw’	---
ML	---	ɟêɾ ‘sorghum type’	rɔɟɲɔ ‘mud’
LH	---	ɖǎlgɔ ‘drum’	---
LM	---	gɔɲ ‘responsibility’	---
MH	---	dɔd ‘stork’	---
	VV- (mid)	VVC (heavy)	VVCC (heavy)
HL	âârēē ‘grass type’	ââs ¹⁵ ‘dried food’	---
HM	---	úū-ɖ ‘wasp’	---
	CVV- (mid)	CVVC (heavy)	CVVCC (heavy)
HL	máâ ‘house’	sēēɲ ‘ruler’	gúùɾɖ ‘energy’
HM	múū ‘mosquito’	ɲî-ɖ ‘tooth’	káāɲ-ɖ ‘fly’
ML	ɬî ‘cassava’	bēēl ‘metal’	kāāɲɖ ‘carrying stick’
LH	---	ɖǎɔɾ ‘fence’	gàágg ‘bird’
LM	---	ɖēēɾ ‘leach’	gèūr-ɖ ‘stomach’
MH	mīí ‘chicken’	būúl ‘bread’	---
LHL	---	ɖùùl ‘instrument’	---

2.4.3 Tone assignment

In three-syllable words

Tone is stable in that it does not shift or spread from one syllable to another. Thus, it is not possible to determine the tone bearing unit (TBU) by observing shifting or spreading. Rather, tone assignment is used as support of the syllable being the TBU.

¹⁵ Can also be interpreted as having a glide *âws*

All attested three-syllable monomorphemic words are presented in (32). Tone assignment is as expected for one and three-tone melodies for the syllable being the TBU. These have one tone per syllable, with the exception of *kàṇàràṇ* ‘jackal’. Two-tone melodies are assigned right-to-left in that the final tone of the melody surfaces on the final syllable, and the first tone of the melody surfaces on the first two syllables.

(32) **Tone assignment in three-syllable monomorphemic words**

Melodies with one or two tones			Melodies with three tones		
M	nēṇnērās	‘fully (ADJ.PL)’	HLM	móónìnmō	‘vegetable type’
L	kàmàlōgg	‘woman’		bámàlǵā	‘morning star’
	sàṇḍàlāṇ	‘living alone’		ḍóggḍòlǵā	‘ankle’
HL	móggólèè	‘maize’	MHM	kūḍúúrīi	‘bird type’
	ṭúnḍúli(g)	‘elbow’		cēggéllūū	‘root name’
ML	būḍīrīṇ	‘sunset’	MHL	ūṇúràè	‘pumpkin type’
LH	bìmiríṭṭ	‘bird type’		kāggólligg	‘cock’
LM	càṇāldā	‘upper arm’	LHL	kàṇàràṇ	‘jackal’
	gèbbèñīḍ	<i>area name</i>			
	mùggùrīi	‘hatred’			
	kūsūmíi	‘knee’			
	ṭāsāmé(g)	‘grass type’			
	fēṇāldé	‘leave for child rearing’			

In disyllabic words

Nearly all disyllabic roots with one or two-tone melodies are assigned tone as expected with one tone per syllable. However, there are five attested exceptions, all of which involve the ML tone melody. The word *ārāāḍ* ‘lake’ of (33) and four words listed below it are exceptions.

All attested disyllabic monomorphemic words with three-tone melodies are also shown in (33). In these words, the syllable with the heaviest syllable weight is assigned two tones and the other syllable is assigned one. If there is the same weight in both syllables, two tones are usually assigned to the first syllable, but in two out of six of such words, tone is assigned to the second syllable (*kḍḍfṛ* ‘weakness’ and *bēṇpáḍ* ‘tomato’). In (33), syllable weight is listed before each word with three tones, where l = light, m = mid, and h = heavy, and the letters for the first and second syllables are divided by a period. It is the underlying syllable structure that determines the syllable weight rather than the surface form. For example, since *mūggúuì* ‘burning wood’ has an underlying final /y/ or /j/, the second syllable is underlying CVVC instead of CVVV.

(33) **Tone assignment in two-syllable monomorphemic words**

Melodies with one or two tones			Weight	Melodies with three tones	
H	fádóól	‘farmland’	HLH	l.h	rúnjùú-d ‘bird type’
M	bāróól	‘cistern’	HLM	m.m	áàrēē ‘grass type’
L	sèŋàà-d	‘instrument’		m.l	kə̀lfə ‘jaw’
HL	fíḍin	‘perfume’		m.l	kúùrī ‘sheave’
ML	mōsòr	‘horse’		l.h	máðòùul <i>village name</i>
	ā̀rā̀a-d	‘lake’	HMH	h.h	kúùrlúúgg ‘rat type’
	gōmū̀r	‘dove’		l.h	lúlíḍ ‘snake type’
	gōrmū̀-ḍ	‘tree type’		l.m	málǝḥ ‘nose mucus’
	kā̀nā̀aḍ	‘bowel type’	MHM	m.m	bállēē ‘tree type’
	kāmḕr	‘village’	MHL	m.h	mū̀ggúùì ‘burning wood’
LH	mòḍáál	‘hatred’	LHM	m.l	ḍǝlgə ‘drum’
LM	gə̀mī̀l	‘tree type’	LHL	l.m	bə̀ðə̀l ‘business’
MH	sḕwé̀él	‘tree type’		m.m	kə̀ðfò̀r ‘weakness (N.SG)’
				l.h	jə̀fǝ̀r ‘desire’
				m.m	bè̀rɲá̀ð ‘tomato’
				l.m	ə̀sá̀a ‘wooden pillow’
				l.h	gàḍá̀aè ‘basket’
				l.h	kàḍá̀am ‘work’
				l.h	kù̀sú̀r ‘authority’
				m.m	círsə̀(g) ‘tool cleaner’

2.4.4 Lexical tone

Lexical tone described in this section has to do with roots (single non-bound morphemes) which are distinguished only by tone. Grammatical tone described in 2.4.5 has to do with bound morphemes distinguished only by tone that make a grammatical distinction, or morphemes that consist only of tones.

Gaahmg frequently uses tone for distinguishing lexical meanings, as shown in the lists of minimal pairs in (34-36).

(34) **Noun minimal pairs**

H - M	sóóm	‘hunter’	sṓm	‘medicine’
	śór	‘tree bark’	ṓr	‘anger’
	cáá	‘wild cat’	cāā	‘bath’
	kááé	‘night’	kāāē	‘witch doctor’
H - L	ḍáár	‘throne’	ḍààr	‘eagle’
	śór	‘tree bark’	ə̀r	‘sheep’
H - HL	káár	‘stew’	káar	‘male goat’
	cíl	‘spine’	cíl	‘instrument’

Noun minimal pairs (continued)

H - ML	kɔ̌ðél	‘natural painting’	kɔ̌ðél	‘baboon’
	tírí(g)	‘tree type’	tírì(g)	‘death, dying’
M - L	ǎǎr	‘anger’	àǎr	‘sheep’
M - HM	mūū	‘forehead, face’	múū	‘mosquito’
M - ML	bāāl	‘cave’	bāāl	‘instrument’
	cāā	‘bath’	cāā	‘cooking stone’
	kāpāā-ḍ	‘back of head’	kāpāād	‘bowel for hot food’
M - MH	mīī	‘goat’	míí	‘chicken’
L - ML	ḍèèl	‘storage shelf’	ḍēèl	‘lake’
	jìì	‘tree type’	jìì	‘turkey’
L - MH	jèèm	‘thing, something’	jēém	‘sorghum sieve’
L - LM	bòggò	‘tree type’	bòggō	‘cream’
	bàròḍl	‘snake type’	bàrōḍl	‘cistern’
HM - ML	kāān-ḍ	‘fly’	kāānd	‘water-carrying stick’

(35) Verb minimal pairs in infinitive form

H-L	cág-g	‘bathe, wash’	càg-g	‘finish’
	pál-l	‘cut’	pàl-l	‘fall’
M-L	bēl-l	‘possess’	bèl-l	‘hit, beat’
M-HM	bēl-l	‘possess’	bēl-l	‘name, call’
L-HM	bèl-l	‘hit, beat’	bēl-l	‘name, call’

(36) Differing word category minimal pairs

H - M	káén	‘finished (ADJ)’	kāēn	‘yesterday (ADV)’
H - HL	káén	‘finished (ADJ)’	kāēn	‘thin (v)’
H - ML	fúuí	‘tree type’	fūū	‘male (ADJ)’
H - LHL	kɔ̌ɔ̌fɔ̌r	‘thin, weak (ADJ)’	kòḍḍfɔ̌r	‘weakness’
M - HL	kāēn	‘yesterday (ADV)’	kāēn	‘thin (v)’
M - ML	cīīnd-əgg	‘finishing (N.SG)’	cīīnd-əgg	‘playing (N.PL)’
H - MH	báár	‘weak (ADJ)’	bāār	‘tribe member’
M - MHM	bāāl	‘cave’	bāāl	‘striped (ADJ)’
L - LHL	ḍùùl	‘difficult (ADJ)’	ḍùùl	‘instrument’
HL - ML	jíìlì	‘knowledgeable (ADJ)’	jììlì	‘ignorance’
ML - LH	gāàl	‘falcon’	gāál	‘far (ADJ)’
ML - HMH	būùr	‘pot for wine’	būúr	‘remained (ADJ)’

As seen from (37), tone distinguishes subject and infinitive pronouns, as well as possessive pronouns of kinship terms and body parts. Tone also distinguishes the conjunction ǎ ‘and’ with Low tone from the second singular pronouns ɔ̌ ‘you’ and ɔ̌ ‘your’. Pronouns are discussed in the sections indicated in (37) and the conjunction

ǝ ‘and’ is discussed in 15.2.

(37) **Pronoun minimal pairs**

5.3	9.2	5.2.3	5.2.2	
Subject	Infinitive	Possessive kinship	Possessive body parts	
á	ā	á	ā	1s
ǝ	ǝ	ǝ	ǝ	2s
ē	ē	é	ē	3s

Tone also distinguishes singular and plural demonstrative adjectives as shown in (38) where singular demonstratives have initial High tone and plural demonstratives have initial Low tone.

(38) **Demonstratives (see 8.1.3)**

DEM ADJ SG	DEM ADJ PL	
née ‘this’	nèè ‘these’	near speaker
náá(n) ‘that’	nàà(n) ‘those’	near addressee
nááǝ ‘that’	nààǝ ‘those’	away from both

Tone also distinguishes the animate accompaniment preposition è ‘with’ from the inanimate accompaniment prepositions ē ‘with’ and the general preposition é (GP).

(39) **Preposition minimal pairs**

è ‘with’	Animate accompaniment preposition	11.1
ē ‘with’	Inanimate accompaniment preposition	11.2
é GP	General preposition	11.3

In (40), examples of nouns with three tonal allomorphs of a plural suffix are given. The suffix of (a) has no underlying tone, allowing the plural form to surface with Low tone, the same as in the root. Whereas, the suffix of (b) has underlying Mid tone and the suffix of (c) has underlying High tone. As will be shown in section 6.3.1, there are seven other noun plural suffixes with two or three tonal allomorphs, most of which are not semantically or phonologically predictable with the root.

(40) **Tonal allomorphs of noun plural suffixes (see 6.3.1)**

	Suffix Tone	Noun SG	Noun PL	
(a)	-Agg	lǝŋǝ	lǝŋǝ-ǝgg	‘tree type’
(b)	-Āgg	bǝŋŋ	bǝŋŋ-ǝgg	‘pulp’
(c)	-Ágg	mīǝ	mīǝ-ǝgg	‘stone’

2.4.5 Grammatical tone

Gaahmg also frequently uses tone to distinguish grammatical function; there are grammatical distinctions made only by tone in nouns and verbs. Grammatical tone distinguishes bound morphemes with different grammar, or is a morpheme in itself, either added to or replacing underlying stem tone.

Tone distinguishes bound morphemes, such as the copular and definite clitics of (41). The copular singular clitic = \bar{A} which takes the [ATR] value of the root has underlying Mid tone, the copular plural clitic = \dot{A} has underlying Low tone, and the definite clitic = \acute{A} has underlying High tone.

(41) **Copular = \bar{A} , = \dot{A} and definite = \acute{A} suffixes**

		7.2	7.3	
	Noun	Noun COP	Noun DEF	
SG	ḍōm	ḍōm = ̄	ḍōm = ́	‘Arab’
PL	ḍōm-g	ḍōm-g = ̀	ḍōm-g = ́	‘Arabs’

Similarly, the past and non-past continuous forms differ only by tone as shown by the verbs of (42). The past continuous suffix = $\bar{A}n$ has underlying MH tone, whereas the non-past continuous suffix = $\acute{A}n$ has underlying High tone.

(42) **Past = $\bar{A}n$ and non-past = $\acute{A}n$ continuous verb forms**

	9.8.6	9.8.7	
Root tone	CONT.P.3sN	CONT.N.3sN	
H	kóm-ān	kóm-án	‘cut, chop’
L	gāf-ān	gāf-án	‘give’
MH	kǎð-ǎn	kǎð-án	‘strike’

Several verb clitics listed in (43-44) are also distinguished only by tone. The third singular object pronoun allomorph = E with no underlying tone attaches to first singular verbs as in (a) and a different allomorph = \bar{E} with HM tone attaches to third singular verbs as in (b). The relative clause definite clitic = \acute{E} with High tone attaches to singular person verb forms as in (c), and the clitic = \dot{E} with Low tone attaches to plural person verb forms as in (d). The subordinate (SBO1) clitic = \bar{E} with Mid tone attaches to first singular verbs as in (e).

(43) **Verb clitics distinguished by tone**

- | | | | | | |
|-----|--------|----------|---------------|---------|----------------------|
| (a) | 10.4.2 | 1sN/3sA | = E | pál = ̄ | ‘cut.INCP.1sN = 3sA’ |
| (b) | 10.4.2 | 3sN/3sA | = \bar{E} | pál = ̄ | ‘cut.INCP.3sN = 3sA’ |
| (c) | 10.9 | RDM.SG | = \acute{E} | pál = ́ | ‘cut.INCP.3sN=RDM’ |
| (d) | 10.9 | RDM.PL | = \dot{E} | pál = ̀ | ‘cut.INCP.3pN=RDM’ |
| (e) | 10.7 | SBO1.1sN | = \bar{E} | pál = ̄ | ‘cut.INCP.1sN=SBO1’ |

The third singular marked object pronoun allomorph =*i* with no underlying tone attaches to first singular verbs as in (a) and a different allomorph =*ì* with Low tone attaches to third singular verbs as in (b). The imperfect third singular clitic =*í* with High tone attaches to incompleted verbs as in (c), and the subordinate ‘when’ (SBO1) clitic =*ǎ* with LM tone attaches to third singular verbs as in (d).

(44) **Verb clitics distinguished by tone**

- | | | | | | |
|-----|--------|----------|------------|---------------|---------------------|
| (a) | 10.4.2 | 1SN/3SN | = <i>i</i> | pól= <i>ī</i> | ‘cut.INCP.1sN=3sAM’ |
| (b) | 10.4.2 | 3SN/3SN | = <i>ì</i> | pól= <i>ì</i> | ‘cut.INCP.3sN=3sAM’ |
| (c) | 10.6 | IPF.3sN | = <i>í</i> | pól= <i>í</i> | ‘cut.INCP=IPF.3sN’ |
| (d) | 10.7 | SBO1.3sN | = <i>ǎ</i> | pól= <i>ǎ</i> | ‘cut.INCP.3sN=SBO1’ |

Where tone is a morpheme in itself, it can be added to segmental forms or can replace the underlying tone of segmental forms. Tone is added to distinguish subject persons of verb forms and to distinguish future and non-future subject pronouns. Tone replacement is used for genitive case, plural person possession of body part nouns, antipassives, causatives, and verbal nouns.

In verbs, tone marks subject person agreement by being added to the stem-final syllable. As shown in (45), tone distinguishes third singular and third plural subject verb forms from other person forms. The verb root of (45) has underlying High tone and the completive suffix *-sA* has no underlying tone. In such verbs, high tone is assigned to the stem-final syllable of third singular forms, Low tone is assigned to the stem-final syllable of third plural forms, and Mid tone is assigned to the stem-final syllable of first and second person forms.

(45) **Paradigm of completive verb *kóm-sA* ‘chop-COMP’ with subject pronouns (see 9.5)**

á	kóm-sǎ	1s	āgg	kóm-sǎ	1p
ú	kúm-sǔ ¹⁶	2s	ūg	kúm-sǔ	2p
ē	kóm-só	3s	ē, ēgg	kóm-sò	3p

Tone is also added to subject pronouns to indicate future tense of the following verb form. In first and second person subject pronouns, Mid tone is assigned along with High tone on the final syllable, resulting in falling tone.

¹⁶ As discussed in 5.3, the second person morpheme specifies [+ATR] quality on verbs forms. The [+ATR] quality spreads leftward to the second person pronoun clitics *ɔ*=, *ɔgg*=.

(46) **Future and non-future pronouns (see 9.8.4)**

Subject non-future	Subject future	
á	â	1s
ó	ô	2s
āggá	āggâ	1p
ōggó	ōggô	2p

Genitive case is marked by tone replacement. Nouns with Mid and MH root tone melody have HL melody in genitive forms. Nouns with all other root tone melody have ML tone melody in genitive forms.

(47) **Genitive singular and plural nouns with various root tone melodies (see 6.5)**

Root tone	GEN tone	Noun SG DEF	Noun SG GEN	Noun PL	Noun PL GEN	
H	ML	t̥s̥s̥ = n	t̥d̥d̥ = n	t̥s̥-gg	t̥d̥-gg	‘cow’
M	HL	m̥m̥ = n	m̥m̥ = n	m̥m̥-gg	m̥m̥-gg	‘goat’
L	ML	d̥d̥ = n	d̥d̥ = n	d̥d̥-gg	d̥d̥-gg	‘rat’

A Low-Mid tone pattern is required by the plural person possessive morpheme of all body part nouns. Although the underlying tone melody of *b̥b̥r̥à* / *b̥b̥r̥à-gg* ‘shoulder’ in the paradigm of (48) is Mid-Low, the plural forms possessed by plural persons surface as Low-Mid.

(48) **Possessive paradigm for inalienable body part**

b̥b̥r̥à / *b̥b̥r̥à-gg* ‘shoulder’ (see 6.4)

	Singular person pronouns			Plural person pronouns		
Noun SG	ā	b̥b̥r̥à	1sP	---		1pP
	ō	b̥b̥r̥à	2sP	---		2pP
	ē	b̥b̥r̥à	3sP	---		3pP
Noun PL	ā	b̥b̥r̥à-gg	1sP	āgg	b̥b̥r̥à-gg	1pP
	ō	b̥b̥r̥à-gg	2sP	ūgg	b̥b̥r̥à-gg	2pP
	ē	b̥b̥r̥à-gg	3sP	ēgg	b̥b̥r̥à-gg	3pP

In antipassive forms, root tone melodies are replaced by other tone melodies: High changes to HM, Mid changes to MH, and Low changes to LH.

(49) **Antipassive suffix -An on third singular completive verbs (see 9.10.2)**

Root tone	3sN COMP	ANTIP tone	3sN ANTIP-COMP	
H	f̥r̥-só	HM	f̥r̥-ōn-só	‘smell’
M	c̥r̥-só	MH	c̥r̥-ón-só	‘help’
L	d̥r̥-sū	LH	d̥r̥-ūn-sú	‘bury’

In causative forms, root tone melodies are also replaced by other tone melodies, as shown in (50).

(50) **Third singular causative completive verbs (see 9.11.2)**

Root	COMP	CAUS	COMP	
tone	3sN	tone	CAUS 3sN	
H	fĩr-só	HM	fĩr-só	‘smell’
M	cõr-só	HM	cũr-sú	‘help’
L	ḍũr-sũ	ML	ḍũr-sũ	‘bury’
MH	kǎs-só	HM	kǎs-só	‘strike’

Finally, in verbal nouns, root tone melodies are replaced by other tone melodies, as shown in (51).

(51) **Verbal noun plural suffixes = *Agg*, = *gg* (see 10.10)**

Root	INF	VN	VN SG	VN PL	
tone		tone			
H	pál-l	M	pāl	pāl = āgg, pāl = g	‘cut’
L	f ɛl-l	ML	f ɛl	f ɛl = āgg, f ɛl = g	‘tell’
HL	pĩr-r	ML	pĩr	pĩr = àgg, pĩr = g	‘deceive’
HM	bɛl-l	M	bɛl	bɛl = āgg	‘name’
MH	kǎð-ð	M	kǎn	kǎð-āgg	‘strike’

3 Morphophonology

Several morphophonological alternations applying throughout the language are presented in this chapter and labelled with an M. Alternations which apply only to certain morphemes are presented in the relevant sections, and not here. Phonological consonant rules, which were presented in 2.1.3 and the monosyllabic vowel lengthening which was presented in 2.3.3, are relisted here for ease of reference.

{P1} Bilabial and palatal weakening (from 2.1.3)

- (a) /b/, /ɟ/ are weakened intervocalically to approximants.
- (b) /b/, /ɟ/, /w/, /y/ are weakened word-finally to vowels with the same [ATR] quality as the preceding vowel.
- (c) /w/, /y/ before word-final sonorants are weakened to vowels with the same [ATR] quality as the preceding vowel.

{P2} Velar plosive elision (from 2.1.3)

/g/ is elided both inter-vocalically and word-finally when following a vowel.

{P3} Plosive weakening (from 2.1.3)

Plosives are weakened to approximants when they immediately precede word-final obstruents and follow vowels.

{P4} Monosyllabic vowel lengthening (from 2.3.3)

Vowels are realized as long in monosyllabic, opened-syllable nouns and verbs.

Whereas the phonological rules apply to all relevant environments in a word, the morphophonological rules only apply to relevant environments that exist because of morphemes combining. All rules in this section apply in several bound morphemes, often including both suffixes and clitics in both nouns and verbs. However, morphophonological rules are not applied to two noun clitics (COP, ACM), and are not applied to several verb clitics. Nevertheless, all the rules apply to all stem suffixes. In 4.2, morphophonological rules not applied to certain clitics are further discussed.

In the relevant sections throughout this thesis, when the rules of this section are referred to, they are indicated by number between braces such as {M3}. Thus, the common morphophonological rules of this section are easily distinguished from less common processes applied to one or two morphemes. The latter are more like exceptions in the language than rules. Each of the following rules is explained afterwards with examples.

3.1 Morphological consonant and vowel elision

{M1} Verb stem suffix vowel elision

When vowels are joined through morphology to verb stems with a vowel-final suffix, the final vowel of the stem is elided.

When the agentive passive clitic = \bar{E} is attached to the stem $j\hat{e}r-s\bar{a}$ ‘forget-COMP’, the completive suffix vowel is elided ($j\hat{e}r-s = \bar{e}$). In the past continuous relative clause verbs of 10.9, the definite clitic = \bar{E} does not elide the continuous suffix vowel - a of $\eta\bar{a}p-\bar{a} = \bar{e}$ ‘file-CONT.P.RC=RDM’ and is one exception to the rule.

{M2} Suffixes becoming juxtaposed syllables

When vowels are joined through morphology to roots with final vowels, no vowels are elided and the bound morpheme appears as a syllable on its own, juxtaposed to the root.

When the vowel-initial past continuous suffix - $\bar{A}n$ is attached to the vowel-final verb root /pa/ ‘guard’, the suffix becomes a second syllable, juxtaposed to the root ($p\bar{a}.\bar{a}n$). When the copular clitic = $\bar{V}n$ is attached to the root $t\bar{s}\bar{s}$ ‘cow’, the clitic vowel V takes on all the features of the final vowel and begins a second syllable ($t\bar{s}\bar{s}.\bar{s}n$). When the agentive passive clitic = \bar{E} is attached to the root $b\bar{a}\bar{a}$ ‘throw.INCP’, the suffix vowel becomes a new syllable ($b\bar{a}.\bar{e}$).

3.2 Morphological [ATR] harmony

In 2.2.2.2, it was observed that the [-ATR] vowels (ϵ , \bar{a} , \bar{a}) and the [+ATR] vowels (i , u , \bar{o}) function as distinct sets in roots, the vowels of one set never occurring in the same root with vowels of the other set. The [ATR] harmony also functions across morpheme boundaries, spreading either to the right or to the left without limit in words to all vowels unspecified for [ATR]. [+ATR] quality is dominant. In all morphemes, only [+ATR] quality is specified underlying, and spreads from root to bound morpheme or from bound morpheme to root. Vowels that are not specified for [ATR], or do not have an [ATR] association through spreading, are realized as [-ATR] by default. Examples follow in the next two sections.

{M3} [+ATR] spreading

[+ATR] quality spreads to the left or to the right across morpheme boundaries, only limited by word boundaries, to vowels unspecified for [ATR].

3.2.1 Rightward [ATR] spreading

The [+ATR] quality spreads rightward from noun roots onto plural suffixes. In (1), nouns representing each of the six vowels attach the plural suffix *-EEgg*, where E is a vowel specified as [-back]. In (d-f), the [+ATR] quality assigned to the noun root spreads rightward onto the suffix unspecified for [ATR]. In (a-c), no such spreading occurs since roots and suffixes are unspecified for [ATR] and take [-ATR] quality by default.

(1) **Rightward [ATR] spreading to plural suffix *-EEgg***

Vowel	Noun SG	Noun PL	
(a) ε	cèèr	cèèr-èègg	‘singer’
(b) a	ḍààr	ḍààr-èègg	‘eagle’
(c) ɔ	cɔɔl	cɔɔl-èègg	‘donkey’
(d) i	ʒííl	ʒííl-īigg	‘cricket’
(e) ə	gùùr	gùùr-īigg	‘grinding stone’
(f) u	ḍààr	ḍààr-īigg	‘sheep’

3.2.2 Leftward [ATR] spreading

The [+ATR] quality spreads leftward from the imperative plural suffix onto verb roots. A list of singular imperative and imperative plural forms representing each of the six vowels is given in (2). The singular imperative generally has no suffix and is often the same form as the root. The imperative plural has the suffix *-ḍA⁺*, where *A⁺* is a back vowel specified as [+ATR] and takes the [round] feature of the root. In (a-c), verb roots unspecified for [ATR] become [+ATR] in the plural imperative form. In (d-f), [+ATR] verb roots remain [+ATR].

(2) **Leftward [ATR] spreading from imperative plural suffix *-ḍA⁺***

Vowel	IMP	IMP PL	
(a) ε	féé	fíí-ḍɔ	‘clean’
(b) a	ṭál	ṭál-ḍɔ	‘put, make’
(c) ɔ	kóm	kúm-ḍū	‘cut, chop’
(d) i	díú	díú-ḍū	‘plant’
(e) ə	pêr	pêr-ḍə	‘attach’
(f) u	ṭúr	ṭúr-rū	‘see’

3.2.3 [+ATR] bound morphemes

Several [+ATR] bound morphemes which spread their quality to the root or stem are represented in (3). For each morpheme, the underlying root and surface form are given along with the section where the morpheme is discussed. [+ATR] quality distinguished the morphemes *-əgg*, *-⁺g*, *-ḍ⁺A*, *=i*, *=í* from other bound morphemes unspecified for [ATR] which are otherwise segmentally equivalent. In

addition, [+ATR] quality is a morpheme in itself added to second person subject verb forms to distinguish them from other person forms. As will be shown in 5.3, the second person singular verb for ‘chopping’ *ɔ kúmɛn* is [+ATR], whereas the first singular *á kóm-án* and third singular *ɛ kóm-án* are [-ATR].

(3) **[+ATR] bound morphemes and spreading**

Morpheme	Morpheme	UR	SR		Section
N.PL body part	-əgg	/bērd/	bīrd-əgg anus-PL	‘anuses’	6.2.3
	- ⁺ g	/kālāā/	kālāā-gg tongue-PL	‘tongues’	6.2.3
	-V ⁺ gg	/āā-d/	əḍ-əgg eye.lpPp-PL	‘our eyes’	6.2.3
IMP.PL	-d ⁺ A	/nām/	nóm-dḥ break-IMP.PL	‘Break!’	9.4
CAUS	-d ⁺ A	/kór/	kūr-dú ‘read-CAUS’	‘he writes’	9.11
Marked ACC	=ì	/wár/	wór=ì ‘take = 3sAM’	‘he takes him’	5.4, 10.4
DAT	=ín	/gàf/	gə̀ù-s=ín ‘give-COMP=3SD’	‘he gave him’	5.5, 10.5
SBO1	=ì	/ŋān/	ŋə̀p-s=ì ‘file-COMP = SBO1.3sN’	‘(when) he filed’	10.7
Second person subjects		/kóm/	ó kúm-ɛn, ú = kúm-ɛn ‘2sN=chop-CONT.N’	‘you are chopping’	5.3, 9.1

3.3 Morphological [round] harmony

{M4} Rightward [+round] spreading

[+round] quality spreads rightward from the root to all suffix vowels not underlyingly specified for the feature [round].

Several bound morphemes in noun and verb morphology are underlyingly specified for [round], but several bound morphemes in noun and verb morphology are not. The roundness only spreads rightward from roots to suffixes or clitics, and never the opposite direction. Roundness does not spread as specified in every word with every speaker, but tends to vary from word to word and from speaker to speaker.

3.3.1 Rightward [round] spreading in nouns

Nouns with root-final consonant sequences commonly take the plural suffix *-Agg*, where *A* is a back vowel unspecified for [round] and takes the [round] and [ATR] features of the root. In (4), the plural forms are shown for nouns with each of the six vowels. In (c,f), the [+round] feature of the root spreads to the vowel of the plural suffix, causing *A* to become *ɔ* or *u*. In other examples of (4), the suffix vowel is realized as unrounded. In (d-f), the [+ATR] quality of the verb root spreads rightward onto the suffix, whereas in (a-c), the noun root unspecified for [ATR] does not affect the suffix.

(4) **Rightward [+round] spreading to noun plural suffix *-Agg***

	Root vowel	Noun SG	Noun PL	
(a)	ɛ	célɔ	célɔ-āgg	‘local broom’
(b)	a	mānɔ	mānɔ-āgg	‘tree type’
(c)	ɔ	kɔrɔ	kɔrɔ-ɔgg	‘bird type’
(d)	i	tírɔ	tírɔ-ɔgg	‘farm’
(e)	ə	lənɔ	lənɔ-əgg	‘tree type’
(f)	u	cúlɔ	cúlɔ-ūgg	‘birth sack’

3.3.2 Rightward [round] spreading in verbs

The completive verb has the suffix *-sA*, where *A* is a back vowel unspecified for [round] and takes the [round] and [ATR] features of the root. Similarly, plural subjunctive forms have the suffix *-ɔA* with the same vowel unspecified for [round]. In (5), the completive and plural subjunctive forms are shown for verbs with each of the six vowels. In (c,f), the [+round] feature of the root is spread to the vowel of the completive and plural subjunctive suffixes. In other examples of (5), the suffix vowel is realized as unrounded. In (d-f), the [+ATR] quality of the verb root spreads rightward onto the suffix, whereas in (a-c), the verb root unspecified for [ATR] does not affect the suffix.

(5) **Rightward [+round] spreading to completive *-sA* and plural subjunctive *-ɔA***

	Root vowel	COMP	SBJV PL	
(a)	ɛ	bèè-sà	bèè-ɔà	‘tell, say’
(b)	a	cág-sā	cág-ɔā	‘bathe, wash’
(c)	ɔ	kóm-sɔ	kóm-ɔɔ	‘cut, chop’
(d)	i	cíg-sɔ	cíg-ɔɔ	‘wear’
(e)	ə	ɟə̀ə-sɔ	ɟə̀ə-ɔɔ	‘finish’
(f)	u	rùm-sū	rùm-ɔū	‘clear path’

3.4 Morphological tone rules

The following tone rules apply across morpheme boundaries in both noun and verb morphology. They are morphological in that they operate across morpheme boundaries rather than being linked to certain morphemes.

3.4.1 Morphological tone spreading

- {M5} Rightward tone spreading to unassigned bound morpheme vowel
When a bound morpheme with vowel does not have underlying tone, tone spreads rightward from the root or stem to the bound morpheme.

The High tone of the noun root *kɔs* ‘sorghum’ spreads to the plural suffix *-Agg* without tone (*kɔs-ɔgg*). The Mid tone of the incomplete verb stem *cɔr* ‘help.1sN’ spreads to the third singular object clitic =*E* without tone (*cɔr=ɛ* ‘help.1sN=3sA’). In a few nouns and verbs, tone spreads to bound morphemes with underlying tone.

- {M6} Second of two root or stem-final tones reassigned to bound morpheme vowel
When a bound morpheme with vowel does not have underlying tone, and when there are two tones assigned to the root or stem-final syllable, the second tone is delinked and reassigned to the bound morpheme vowel.

The Low tone of the noun *ilɪ* ‘beeswax’ with HL root tone melody delinks and is reassigned to the suffix *-Agg* without tone (*ilɪ-ɔgg*). The Low tone of the verbal noun *pɪr* ‘lie’ with ML tone melody is delinked and reassigned to the plural clitic =*Agg* without tone (*pɪr=ɔgg*).

In a few verbs, the second of two tones assigned to the root-final syllable is not delinked but only spreads. The Low tone of the subjunctive verb *pɪr* ‘lie’ with HL tone melody is not delinked but only spreads to the subjunctive plural suffix *-ɔA* with no underlying tone (*pɪr-ɔA* ‘to.lie.1sN’).

In a few nouns and verbs, the second tone reassigns to bound morphemes with underlying tone. In the third singular continuous past form, the Low tone of the HL tone melody delinks and reassigns to the continuous past suffix *-ɔn* with MH tone (*pɪr-ɔn* ‘lie.3sN’). The initial Mid tone of the continuous suffix assimilates to the preceding Low {M9}.

3.4.2 Mid tone lowering and Low tone raising

There are two significant processes in stems and words—a Mid tone lowering process and a Low tone raising process. In roots or stems with HM tone assigned to

the final syllable, the Mid tone assimilates to a Low tone of a bound morpheme. The rule is symbolized in {M7} where the dash mark represents a morpheme boundary of either an affix or clitic. The rule applies in both noun and verb stems.

{M7} Mid tone lowering
 HM-L > HL-L

The plural noun *wáār-g* ‘insect’ has HM stem tone. The Mid tone becomes Low when the plural copular clitic =*Ā* with Low tone is attached (*wáār-g=ā*).

The infinitive form of the verb *bēl* ‘call’ has underlying HM tone. When the third plural morpheme assigns Low tone to the completive suffix attached to this verb, the root Mid tone becomes Low (*bēl-dā*).

In verbs with Low root tone melody, Low tone is raised to Mid when a suffix with Low tone is attached, as symbolized in M8. The process does not occur on verbs with other tone melodies ending in Low tone such as HL or ML tone melodies.

{M8} Verb root L raised to M preceding suffix L
 [only in verbs with Low root tone melody]
 L-L > M-L

The imperative form of the verb *jēr* ‘forget’ has underlying Low tone melody. When the third plural morpheme assigns Low tone to the completive suffix on the same verb, the Low root tone becomes Mid (*jēr-sā*).

3.4.3 Suffix High and Mid tone lowering

There is also a lowering process of both High and Mid tone of bound morphemes. A contrast between High and Mid tone is neutralized on bound morphemes following root- or stem-final Low tone. The morphological tone lowering process of {M9} symbolizes the fact that High tone on a bound morpheme becomes Mid when following a root or stem with final Low tone. Further, Mid tone on a bound morpheme assimilates to root or stem-final Low tone. The rule applies in all noun and verb stems. However, the rule does not apply to some clitics such as accompaniment, passives, imperfections, and dative pronouns attached to noun or verb stems.

{M9} Bound morpheme High and Mid tone lowering
 L-H > L-M
 L-M > L-L

When the copular clitic =*Ā* attaches to the noun stem *sēēn* ‘ruler’ with final Low

tone, the clitic Mid tone becomes Low ($s\acute{e}\grave{e}n = \grave{a}$). When the definite clitic = \acute{A} attaches to the same noun, the clitic High tone is lowered to Mid ($s\acute{e}\grave{e}n = \grave{a}$). However, the Mid tone of the copular clitic = $\bar{A}n$ does not lower when attached to $q\grave{i}i$ ‘rat’ ($q\grave{i}i = \bar{i}n$). Similarly, the Mid tone of the accompaniment clitic = $n\bar{E}$ does not lower when attached to the vowel-final noun stem $\grave{a}ns\grave{o}$ ‘cooking plate’ ($\grave{a}ns\grave{o} = n\bar{E}$).

The infinitive verb $d\bar{o}s$ ‘stand’ has Mid-Low tone melody. In the first singular completive form, Mid tone assigned to the stem-final syllable assimilates to the root-final Low tone ($d\bar{o}s-s\grave{o}$). In the third singular form of the same verb, High tone assigned to the stem-final syllable lowers to Mid tone ($d\bar{o}s-s\bar{o}$). However, when the imperfect clitic = \acute{E} with High is added to the third singular completive form, the High clitic tone does not become Mid ($d\bar{o}s-s = \acute{E}$).

3.4.4 Three tones assigned to a single stem syllable

There are various three-tone contours assigned through morphology to a single syllable, which result in surface tones that differ from the underlying tones. The combinations of underlying tones mostly do not surface in a single syllable in roots. Therefore, the changes resulting in the surface form are analyzed as morphophonological processes rather than processes that occur throughout the language.

As symbolized in {M10}, when the three tones High, Low, High are all assigned to a single stem syllable through morphology, the resultant tone for the syllable is High-Mid-High.

{M10} HLH > HMH

The first singular incompletive verb $p\acute{r}$ ‘lie’ has a HL root tone melody. In the third singular incompletive form when High tone is added to the root tone to mark third person, the three tones High, Low, and High are all assigned to the same syllable and the Low tone surfaces as Mid ($p\acute{r} \acute{r}$).

As symbolized in {M11}, when the three tones Low, High, Low are all assigned to a single stem syllable, the resultant tone for the syllable is Low-Mid-Low. However, the underlying contour surfaces without change in the heavy syllable noun root $q\grave{u}ul$ ‘instrument’, as shown in (31) of section 2.4.2.

{M11} LHL > LML

When the third plural past continuous suffix $-\bar{A}n$ with MHL tone is added to the verb $d\bar{o}s$ ‘stand’, and the initial Mid tone of the suffix assimilates to root-final Low tone, the suffix LHL tone then surfaces as LML ($d\bar{o}s-\bar{A}n$ ‘starting.3pN’).

4 Clitics and word structure

In this chapter, we show that various clitics attach to several word categories (4.1), discuss word structure (4.2), and differentiate between the word categories nouns, adjectives, and verbs (4.3).

4.1 Clitics

There are eight grammatically distinct clitics which attach to more than one word category. In addition, there are other clitics which are combinations of clitics, where the morphemes from which they are formed are given in parentheses in table 6 and are explained in the sections to follow. Copular, definite, and relative clause definite clitics can have number distinction, sometimes depending on the word category to which they attach. Dative, accompaniment, locative copular, subordinate, and perfect clitics never have number distinction. The clitics in table 6 are those which attach to consonant-final words. Clitic allomorphs sometimes attach to other word-final segments, as will be discussed in relevant morphology sections. The difference between relative clauses marked and unmarked for definiteness will be discussed in 14.6.

Table 6: Clitics on consonant-final words

	SG	PL
Copular (COP)	$= \bar{A}_{N_2} = \bar{A}_{\text{PRON}_2 \text{ --- ADJ}}$	$= \bar{A}$
Definite (DEF)	$= \bar{A}$	$= \bar{A}_{N_2} = \bar{A}_{\text{ADJ}}$
Relative clause definite (RDM)	$= \bar{E}$	$= \bar{E}$
Dative (DAT)	$= \bar{A}n$	$= \bar{A}n$
Relative clause dative (RDTM)	$= \bar{E}\bar{E}n$ (from $= \bar{E} = \bar{A}n$)	$= \bar{E}\bar{E}n$ (from $= \bar{E} = \bar{A}n$)
Locative copular (LCM)	$= \bar{A}n$ (from $\bar{i}n/\bar{e}\bar{e}n$)	$= \bar{A}n$ (from $\bar{e}gg\bar{a}n$)
Relative clause locative copular (RLCM)	$= \bar{E}\bar{E}n$ (from $= \bar{E} \bar{i}n/\bar{e}\bar{e}n$)	$= \bar{E}\bar{E}n$ (from $= \bar{E} \bar{e}gg\bar{a}n$)
Accompaniment (ACM)	$= \bar{E}$	$= \bar{E}$
Relative clause accompaniment (RDM=ACM)	$= \bar{E}\bar{E} = n\bar{E}$ (from $= \bar{E} = n\bar{E}$)	$= \bar{E}\bar{E} = n\bar{E}$ (from $= \bar{E} = n\bar{E}$)
Subordinate (SBO)	$= \bar{E}$	$= \bar{E}$
Relative clause subordinate ‘when’ (RDM=SBO)	$= \bar{E}\bar{E} = n\bar{E}$ (from $= \bar{E} = n\bar{E}$)	$= \bar{E}\bar{E} = n\bar{E}$ (from $= \bar{E} = n\bar{E}$)
Perfect clitic (PF)	$= r$	$= r$

Each clitic is presented below, first in an example clause, and then attached to various word categories. The meaning of each clitic, as well as the section where its

morphology is presented, is also mentioned.

4.1.1 Copular clitic

In answer to questions such as *jīn néé* ‘What is this?’ and various other non-verbal clauses described in 14.6, copular clitics (COP) are attached to nouns, adjectives, or pronouns. Singular and plural copular clauses are shown in (1). See 7.2 and 8.3.1 for a presentation of copular clitic morphology.

- (1a) *fěētfā* = *n* *àggáár* = *ā* (b) *ṭó-gg* *sèggār-g* = *à*
 Feetfa =DEF hunter =COP cow-PL strong-PL = COP
 ‘Feetfa is a hunter.’ ‘Cows are strong.’

The singular copula clitic is =*Ā* with Mid tone on nouns, =*À* with Low tone on pronouns, and no marking on adjectives. The plural copula clitic is =*À* on all words.

(2) Copular clitic

	SG	PL	
Noun	<i>àggáár</i> = <i>ā</i>	<i>àggáār-g</i> = <i>à</i>	‘is a hunter’
ADJ	<i>jāā bāṇḍāl</i>	<i>jōgg bāṇḍāl-g</i> = <i>à</i>	‘is a weak person’
1sP	<i>óṇ</i> = <i>ḍ</i>	<i>ónègg</i> = <i>ḍ</i>	‘is mine’

4.1.2 Definite clitic

The definite clitic (DEF) indicates the speaker believes a word is active or known information in the mind of the hearer. See also 7.3 and 8.3.2.

- (3a) *á* *jām* *àggáár* = *á* (b) *ṭó-gg* *sèggār-g* = *à* *nāām*
 1sN want hunter = DEF cow-PL strong-PL = DEF eating
 ‘I want the hunter.’ ‘The strong cows are eating.’

The singular definite clitic is =*Á* with High tone. The plural definite clitic is =*À* with High tone on nouns and =*À* with Low tone on adjectives. It is =*n* on vowel-final nouns and adjectives.

(4) Definite clitic

	SG	PL	
Noun	<i>àggáár</i> = <i>á</i>	<i>àggáār-g</i> = <i>á</i>	‘the hunter’
ADJ	<i>jāā-n bāṇḍāl</i> = (<i>á</i>)	<i>jōgg-(ḍ) bāṇḍāl-g</i> = <i>à</i>	‘the weak person’
3SP	<i>mōsōr ínī</i> = <i>n</i>	<i>mōsōr-èègg ínīgī</i> = <i>n</i>	‘the his horse’

In singular noun phrases with a head noun and adjective modifier, the definite clitic

attaches to the adjective unless it is consonant-final and the noun is vowel-final.

(5) Definite clitic on singular nouns and adjectives

Noun-final	ADJ-final	Noun SG	ADJ DEF	
V = DEF	C = (DEF)	wéé = n	bér = (á)	‘the clean house’
C	V = DEF	kòlèèð	îi = ín	‘the heavy sword’
C	C = DEF	jēn	bándāl = á	‘the weak person’
V	V = DEF	bààð	fāā = n	‘the old father’

In plural noun phrases with a head noun and adjective modifier, the definite clitic attaches to the adjective and optionally to the head noun.

(6) Definite clitic on plural nouns and adjectives

Noun-final	ADJ-final	Noun SG	ADJ DEF	
C-PL = (DEF)	C-PL = DEF	wís-ṣg = (ṣ)	bér-g = à	‘the clean houses’
C-PL = (DEF)	C-PL = DEF	kòlèèð-g = (ṣ)	îi-g = ð	‘the heavy swords’
C-PL = (DEF)	C-PL = DEF	jṣgg = (ṣ)	bándāl-g = à	‘the weak persons’
C-PL = (DEF)	C-PL = DEF	bààw-āāḍ = (á)	fāng = à	‘the old fathers’

4.1.3 Relative clause definite clitic

Relative clauses are marked or unmarked for definiteness just as noun phrases. When the head of the relative clause is known information, the relative clause definite clitic (RDM) is attached to the clause-final word. See also 7.4, 8.3.3, and 14.7.

- (7) á jām jāā ná sèggār = **é**
 1sN want person REL strong = RDM
 ‘I want the person who is strong.’

The singular relative clause clitic is =*É* with High tone and the plural clitic is =*È* with Low tone.

(8) Definite relative clause clitic

	SG	PL	
Noun	ná àggáár = é	nà àggáâr-g = è	‘who is a hunter’
ADJ	ná bándāl = é	nà bándāl-g = è	‘who is weak’
Body part	ná àn wéé	nà àn wísṣ-g	‘who is
locative	áān = é	ṣṣng = ì	behind the house’
ADV	ná líj-jṣ òndógg = í	nà líj-jṣ òndógg = ì	‘who came with force’
Verb	ná ṣān = é	nà ṣān = è	‘who files’

4.1.4 Dative clitic

The dative (DAT) has the semantic roles of beneficiary and recipient. See also 7.5 and 8.3.4.

- (9) á gǎf jèèm càðr = **ǎn**
 1sN give something rabbit = DAT
 ‘I give something to a rabbit.’

Singular and plural dative clitics are =*ǎn*.

(10) Dative clitic

	SG	PL	
Noun	àggáár = ǎn	àggáār-g = ǎn	‘to a hunter’
ADJ	jāā bándāl = ǎn	jōgg bándāl-g = ǎn	‘to a weak person’

4.1.5 Relative clause dative clitic

When the head of the relative clause is an indirect object, the relative clause dative clitic (RDTM) is attached to the clause-final word. See also 8.3.5.

- (11) á gǎf jèèm jāā ná sèggār = **éēn**
 1sN give something person REL strong = RDTM
 ‘I give something to the strong person
 (lit. the person who is strong).’

The singular relative clause dative clitic is =*ÉĒn* (from the combination of the singular relative clause definite clitic and dative clitic =*É*=*ǎn* ‘=RDM.SG=DAT’) with HM tone and the plural is =*ĒĒn* (from =*Ē*=*ǎn* ‘=RDM.PL=DAT’) with Low tone.

(12) Relative clause definite and dative clitic

	SG	PL	
Noun	ná àggáár = éēn	nà àggáār-g = èēn	‘to the . . who is the hunter’
ADJ	ná bándāl = éēn	nà bándāl-g = èēn	‘to the . . who is the weak’
Body part locative	ná àn wéé áǎn = éēn	nà àn wísō-g ǎǎng = ììn	‘to the . . who remains behind the house’
ADV	ná líj-jō ǎndǎgg = fin	nà líj-jō ǎndǎgg = ìn	‘to the . . who came with force’

4.1.6 Locative copular clitic

In non-verbal locative clauses, the singular or plural locative copula *îin/éġġàn* separates the subject from the predicate. However in fast speech, both singular and plural copulas attach to the subject noun phrase in the form of the clitic =*Ān* (LCM). The singular locative copula *îin/éġġàn* of (13a) is replaced by the clitic =*Ān* attached to the subject noun in (b). The plural locative copula *éġġàn* of (c) is replaced by the same clitic in (d). See also 7.5, 8.3.4, and 14.6.4.

(13) Locative copular clauses

- (a) *ǰāā bānḍāl îin wéé bènǰ*
 person weak LCM house beside
 ‘A weak person is beside a house.’
- (b) *ǰāā bānḍāl = ān wéé bènǰ*
 person weak=LCM house beside
 ‘a weak person is beside a house.’
- (c) *ǰǵġ bānḍāl-g éġġàn wéé bènǰ*
 people weak-PL LCM house beside
 ‘Weak people are beside a house.’
- (d) *ǰǵġ bānḍāl-g = ān wéé bènǰ*
 people weak-PL=LCM house beside
 ‘Weak people are beside a house.’

The locative copular clitic happens to have the same form as the dative clitic.

(14) Locative copular clitic (rapid speech form of *îin/éġġàn*, *éġġàn*)

	SG	PL	
Noun	àġġáár = ān	àġġáār-g = ān	‘a hunter is’
ADJ	ǰāā bānḍāl = ān	ǰǵġ bānḍāl-g = ān	‘a weak person is’

4.1.7 Relative clause locative copular clitics

As in (15a), when the head of a definite relative clause is the subject of a non-verbal locative clause, the relative clause definite clitic =*Ē* is attached to the final word of the relative clause before the locative copula *îin/éġġàn*. However, in fast speech as in (b), the singular relative clause locative copular clitic =*ÉĒn* (RLCM) replaces the relative clause definite clitic =*Ē* and the locative copula *îin/éġġàn*. Similarly, the plural relative clause locative copular clitic =*ĒĒn* of (d) replaces the relative clause definite clitic =*Ē* and the particle *éġġàn* in (c). See also 8.3.5 and 14.7.

(15) **Relative clause locative copular clauses**

- (a) jāā ná bándāl = **é** **fīn** wéé bèŋɲ
 person REL weak=RDM.SG LCM house beside
 ‘The weak person (lit. person who is weak) is beside a house.’
- (b) jāā ná bándāl = **éēn** wéé bèŋɲ
 person REL weak=RLCM house beside
 ‘The weak person is beside a house.’
- (c) jōgg nà bándāl-g = **è** **ēggàn** wéé bèŋɲ
 people REL weak-PL=RDM.PL LCM house beside
 ‘The weak people are beside a house.’
- (d) jōgg nà bándāl-g = **èēn** wéé bèŋɲ
 people REL weak-PL=RLCM house beside
 ‘the weak people are beside a house.’

The singular relative clause locative copular clitic is =**ÉĒn** (from =**É** *fīn/éēn*) with HM tone and the plural is =**ÈĒn** (from =**È** *ēggàn*) with Low tone, which happen to be the same as the relative clause dative clitics.

(16) **Relative clause locative copular clitic**

(rapid speech form of =**É** *fīn/éēn*, =**È** *ēggàn*)

	SG	PL	
Noun	ná àggáár = éēn	nà àggáār-g = èēn	‘the . . who is the hunter is’
ADJ	ná bándāl = éēn	nà bándāl-g = èēn	‘the . . who is weak is’
Body part locative	ná àn wéé ááŋ = éēn	nà àn wísō-g óəŋg = ìin	‘the . . who remains behind the house is’
ADV	ná líj-jó ɔ̀ndógg = fīn	nà líj-jó ɔ̀ndógg = ìin	‘the . . who came with force is’

4.1.8 Accompaniment clitic

The accompaniment clitic (ACM) is used on noun phrases in adjuncts introduced by the animate preposition *ə* ‘with’ if the noun has the semantic role of accompaniment. See also 7.6 and 8.3.6.

- (17) bāárg-á áǎ-ǎ n è àggáár = **ē**
 Baggara-DEF coming with hunter = ACM
 ‘The Baggara tribe was coming with a hunter.’

Singular and plural accompaniment clitics are =*E*.

(18) **Accompaniment clitic**

	SG	PL	
Noun	è àggáár = ē	è àggáār-g = ē	‘with a hunter’
ADJ	è jāā bāṇḍāl = ē	è jōgg bāṇḍāl-g = ē	‘with a weak person’
Body part	è jāā ná nā	è jōgg nā nā	‘with a person who
locative	wéé ááṇ = ē	wísō-g óàṅg = ī	remains behind a house’
ADV	è jāā ná líj-jō ōṇḍógg = ī	è jōgg nā líj-jō ōṇḍógg = ī	‘with a person who came with force’

4.1.9 Relative clause definite and accompaniment clitic

When the head of the relative clause has an accompaniment role and is introduced by the animate preposition *é* ‘with’, the relative clause definite and accompaniment clitics (RDM=ACM) are attached to the clause-final word. See also 8.3.7.

- (19) bāárg-á áō-ā n è jāā ná sèggār = **éé = nē**
 Baggara-DEF coming with person REL strong = RDM = ACM
 ‘The Baggara were coming with the strong person
 (lit. the person who is strong).’

The singular relative clause definite and accompaniment clitic is =**ÉÉ = nē** (from =**É = nē** ‘=RDM.SG=ACM’) and the plural is =**ÈÈ = nē** (from =**È = nē** ‘=RDM.PL=ACM’), where the relative clause definite clitic vowel is lengthened.

(20) **Relative clause definite and accompaniment clitics**

	SG	PL	
Noun	ná àggáár = éé = nē	nā àggáār-g = èè = nē	‘with the . . who is the hunter’
ADJ	nā bāṇḍāl = éé = nē	nā bāṇḍāl-g = èè = nē	‘with the . . who is weak’
Body part	nā àn wéé ááṇ =	nā àn wísō-g óàṅg = ìì = nī	‘with the . . who
locative	éé = nē		remains behind the house’
ADV	ná líj-jō ōṇḍógg = íí = nī	nā líj-jō ōṇḍógg = ìì = nī	‘with the . . who came with force’

4.1.10 Subordinate clause-final clitic

In subordinate clauses, such as those beginning with the subordinate conjunction *é* *gārā* ‘when’, the clitic =**É** (SBO) attaches to the clause-final word. The subordinate

clause-final clitic = \acute{E} (SBO) should not be confused with the subordinate verb-final clitics (SBO1, SBO2) of 10.7. In (21), the clitic = \acute{y} (SBO1) attaches to the verb *túr-s* = \acute{y} 'struck=COMP=SBO1' in addition to the clause-final clitic = \acute{E} (SBO) and is a different morpheme. See also 7.7 and 8.3.8.

- (21) é gārā bərd̥ = ǝ túr-s = ǝ jāā ná sèggār = é
 GP when lion = DEF see-COMP = SBO1 person REL strong = SBO
 ‘When the lion saw a strong person, . . ’

Singular and plural subordinate clauses have the clitic =É in clause-final position.

(22) **Subordinate clitic**

	SG	PL	
Noun	àggáár=é	àggàâr-g=é	‘When . . . a hunter’
ADJ	jāā bándāl=é	jōgg bándāl-g=é	‘When . . . a weak person’
Body part	jāā àn wéé	jōgg àn wísō-g	‘When . . . a person
locative	bèŋ=é	bèŋāāg=é	remaining beside the house’
ADV	líj-j=ì	líj-j=ŋ(ggì)	‘When . . . came
	āndógg=í	āndógg=í	with force’
Verb	ŋāŋ=ì	ŋāŋ=ŋ(ggì)	‘When he files’

4.1.11 Relative clause definite and subordinate clitic

When a relative clause is at the end of a subordinate clause, the relative clause definite and subordinate clitics (RDM=SBO) are attached to the clause-final word. See also 8.3.9.

- (23) é gārā bə̀rd̥ə túr-s=ɿ jāā ná s̥əggār = **éé=né**
(GP)when lion.DEF see-COMP=SBO1 boy REL strong=RDM=SBO
'When the lion saw the strong boy, . . '

The singular relative clause and subordinate clause clitic is $=\acute{E}\acute{E}=n\acute{E}$ (from $=\acute{E}=n\acute{E}$ ‘=RDM.SG=SBO’) and the plural is $=\grave{E}\grave{E}=n\bar{E}$ (from $=\grave{E}=n\bar{E}$ ‘=RDM.PL=SBO’), where the relative clause definite clitic vowel is lengthened and the subordinate clitic High tone lowers to Mid following Low in the plural clitic {M9}.

(24) Relative clause definite and subordinate clitics

	SG	PL	
Noun	ná àggáár = éé = né	nà àggáàr-g = èè = nē	‘When . . . the . . . who is the hunter’
ADJ	ná bándāl = éé = né	nà bándāl-g = èè = nē	‘When . . . the . . . who is weak’

Body part	ná àn wéé	nà àn wísō-g	‘When . . the . .
locative	ááñ = éé = ní	ôòñg = ìì = nī	who remains behind the house’
ADV	ná líj-jō	nà líj-jō	‘When . . the . . who
	ōñdógg = íí = ní	ōñdógg = ìì = nī	came with force’

4.1.12 Perfect clitic

The perfect clitic (PF) indicates that a past or present action remains or results in the present or future. See also 10.8.

- (25) ē lā gǎf-i wá, ē gèù-s-ñ = **r**.
 3sN UNC /gàf/give.INCP-3sAM not 3sN /gàf/give-COMP-IPF = PF
 ‘He would not give it (money), (since) he had already given.’ (Fand3)

The perfect clitic =*r* optionally attaches to the verb object or verb of the clause.

(26) Perfect clitics

- Noun á kóm-ǎá jōg = **ó = r** ‘in order to completely cut the people’
 Verb á kóm-ǎá = **r** jōg = **ó** ‘in order to completely cut the people’

4.2 Word structure

Before beginning morphology discussion on various word categories, it is important to define how a word boundary is determined and how the terms ‘root’, ‘stem’ and ‘word’ are used in this thesis. The morphemes attached to roots and stems have different functions, different morphophonological alternations, or in other ways are treated as different kinds of morphemes in the language.

Word boundaries are determined by [+ATR] spreading. A word involves all bound morphemes to which [+ATR] quality spreads; with the exception of a few compounds (see footnote 8 in section 2.2.2.2), all vowels of a word have the same [ATR] quality, all being either [+ATR] or all being [-ATR].

A root is the smallest lexical morpheme of a word and can be the entire word. A stem is a root plus an optional suffix and can also be the entire word. A word includes the stem and any optional clitics.

- (27) Stem = root + (suffix)
 Word = stem + (clitic) + (clitic)

All suffixes of the language are a part of the stem and all clitics in the language are outside of the stem, but inside the word. More than one clitic in the same word is possible, but only one suffix is possible in a stem.

Nearly all stems are inflectional, having aspect (COMP, CONT, PF) or mood (IMP, SBJV). On the other hand, clitics are derivational (VN), indicate valency (PAS, PAS.A) or have clausal functions indicating how the word relates to another constituent of the clause (DAT, ACM) or indicates its place in the clause (COP, RDM, SBO).

There are five criteria which can be used to determine whether a bound morpheme is a clitic. The criteria are not all valid for any one clitic. However, none of these criteria are valid for any of the suffixes. Thus, they each individually support the claim that clitics can be grouped differently than suffixes, and how to distinguish the two.

(28) Criteria for determining bound morphemes are clitics

- (a) Attaches to more than one word category
- (b) Attaches to inflectional morphemes
- (c) Attaches to surface-final segments
- (d) Stem tone assignment is the point of departure
- (e) One or more of the morphophonological rules {M1-11} is not applied.

In the previous section of this chapter, it is shown that many of the clitics are attested to attach to more than one word category. In the introduction to noun morphology in 6.1 and the introduction to verb morphology in 9.1, as well as in relevant sections for each morpheme, the other criteria are shown to be valid for at least some clitics. Although several inflectional suffixes cannot be combined with other inflectional suffixes, all clitics can attach to inflectional suffixes. Although suffixes always attach to underlying-final segments of roots, clitics attach to surface-final segments of stems. In noun morphology, it is shown that root tone assignment is the point of departure for stem tone assignment, whereas stem tone assignment is the point of departure for word tone assignment. In verb morphology, although the morphophonological rules {M1-11} always apply to suffixes, it is common for one or more of the rules to not be applied to clitics.

4.3 Comparison of adjectives with nouns and verbs

Nouns and verbs are the two largest word categories in Gaahmg, both of which have significant amounts of morphology. Adjectives (also called qualitative adjectives in this thesis), though less productive, also have a significant amount of morphology. Before discussing the morphology of each, it is important to verify that each is a lexical category in its own right.

Although adjectives commonly function as modifiers, they can also be used nominally or verbally. However, they are not used in some of the syntactic constructions of either nouns or verbs, and there are some differences in the morphology when used as either category. Thus, they can be analyzed as a distinct lexical category from either nouns or verbs.

Adjectives such as *kāyáár* ‘beautiful’ agree in number with the head noun of the noun phrase, often marking plural number with the same suffix -gg as in nouns.

- (29a) á nām ɔɖ kāyáár
1sN want wife beautiful
‘I want a beautiful wife.’
- (b) á nām ɔɔ-gg kāyáār-g
1sN want wives-PL beautiful-PL
‘I want beautiful wives.’

Adjectives are attested to fill the same slot in a clause as a noun when they are predicates of non-verbal clauses (with either a separate or bound copula) or follow a relativizer. However, they are generally not attested (NA) as subjects, objects, or objects of prepositions, although adjectives can modify the head noun of a noun phrase in each of these constructions.

(30) Noun ‘hunter’ and adjective ‘beautiful’ syntactic comparison

	N	ADJ	ADJ of noun phrase
Predicate separate copula	jēn tã àggáár ‘The person is a hunter.’	jēn tã kāyáár ‘. . . is beautiful.’	jēn tã kàmàlògg kāyáár ‘. . . is a beautiful girl.’
Predicate bound copula	jēn àggáár = ā ‘The person is a hunter.’	jēn kāyáár ‘. . . is beautiful.’	jēn kàmàlògg kāyáár ‘. . . is a beautiful girl.’
Following REL	á nām jēn ná àggáár = é ‘I want the person who is a hunter.’	á nām jēn ná kāyáár = é ‘. . . is beautiful.’	á nām jēn ná kàmàlògg kāyáár = é ‘. . . is a beautiful girl.’
Subject	àggáár wēḍán ‘The hunter is good.’	(NA) ‘The beauty is . . .’	kàmàlògg kāyáár wēḍán ‘beautiful girl is . . .’
Object	á nām àggáará ‘I want the hunter.’	(NA) ‘. . . the beauty.’	á nām kàmàlògg kāyáár = á ‘. . . beautiful girl.’
Object of PP	ē léēn è àggáár = ē ‘She comes with a hunter.’	(NA) ‘. . . with the beauty.’	ē léēn è kàmàlògg kāyáár = ē ‘. . . with a beautiful girl.’

A few adjectives such as *wēḍán* ‘good’ have a different form (*wāēḍá* ‘goodness, joy’) when used as a subject, object or object of a preposition. The word used in these constructions is analyzed categorically as a noun, having different syntactic functions than adjectives.

(31) Noun *wáédá* ‘goodness, joy’ and adjective *wédán* ‘good’ syntactic comparison

Predicate	t̪ɔ́ɔ́ = n <i>wédán</i> ‘The cow is good.’	Object	á nām <i>wáédá</i> ‘I want joy.’
Subject	<i>wáédá</i> <i>wédán</i> ‘Joy is good.’	Object of PP	ē áḍ ē <i>wáédá</i> ‘He became with joy.’ (is pleased)’

There are three differences in the stem morphology of nouns and adjectives with final consonants. As shown in (32), singular nouns attach the copular clitic =*Ā*, whereas singular adjectives do not attach any clitic. Plural nouns attach the definite clitic =*Á* with High tone, whereas plural adjectives attach the definite clitic =*À* with Low tone.

(32) Noun ‘hunter’ and adjective ‘beautiful’ morphology comparison

		N.SG	N.PL		ADJ.SG	ADJ.PL
		àggáár	àggáār-g		kāyáár	kāyáār-g
COP	= <i>Ā</i> /= <i>À</i>	àggáár= <i>ā</i>	àggáār-g= <i>à</i>	--/= <i>À</i>	kāyáár	kāyáār-g= <i>à</i>
DEF	= <i>Á</i> /= <i>Ā</i>	àggáár= <i>á</i>	àggáār-g= <i>á</i>	= <i>Á</i> /= <i>Ā</i>	kāyáár= <i>á</i>	kāyáār-g= <i>à</i>
LCM/	= <i>Ā</i> n/	àggáár	àggáār-g	= <i>Ā</i> n/	kāyáár	kāyáār-g
DAT	= <i>Ā</i> n	= <i>ā</i> n	= <i>ā</i> n	= <i>Ā</i> n	= <i>ā</i> n	= <i>ā</i> n
ACM	= <i>Ē</i> /= <i>Ē</i>	àggáár= <i>ē</i>	àggáār-g= <i>ē</i>	= <i>Ē</i> /= <i>Ē</i>	kāyáár= <i>ē</i>	kāyáār-g= <i>ē</i>
RDM	= <i>Ē</i> /= <i>Ē</i>	àggáár= <i>é</i>	àggáār-g= <i>è</i>	= <i>Ē</i> /= <i>Ē</i>	kāyáár= <i>é</i>	kāyáār-g= <i>è</i>
SBO	= <i>Ē</i> /= <i>Ē</i>	àggáár= <i>é</i>	àggáār-g= <i>é</i>	= <i>Ē</i> /= <i>Ē</i>	kāyáár= <i>é</i>	kāyáār-g= <i>é</i>

In addition, the definite clitic =*Vn* with no underlying tone attaches to monosyllabic vowel-final nouns (*máá*, *máá*. =*ā*n ‘house=DEF’), whereas the definite clitic =*V̄n* with High tone attaches to monosyllabic vowel-final adjectives (*ī̄*, *ī̄*. =*ī̄*n ‘heavy=DEF’). The differences in syntactic function and the differences in morphology, support the claim of there being both categorical nouns and adjectives.

A few adjectives may be derived from nouns with the suffix *-i* as seen from the data of (33) taken from the *Gaahmg-English Dictionary* by Madal (2004). The derivation from one category to the other also supports the claim of both categories.

(33) Adjectives derived from nouns (Madal, 2004)

N		ADJ	
āār ¹⁷	‘anger’	āār-i	‘sorrowful, angry’
ḍùḍ	‘year’	ḍuḍ-i	‘annual’
kùsùūr	‘authority’	kusuur-i	‘forceful’

Adjectives can also be used as verbs, often with the same syntax and morphology as

¹⁷ No tone marking was included with the data from the mentioned source.

verbs. Adjectives are attested to fill the same slot in a clause as verbs in the constructions of (34). Many adjectives such as *kāyáár* ‘beautiful’ have the same morphology as verbs for completive and continuous suffixes.

(34) **Verb ‘chop’ and adjective ‘beautiful’ syntax comparison**

	V	ADJ
INF	jēn ɖɔ̀ðs-s ē kóm ‘The person begins to chop.’	jēn ɖɔ̀ðs-s ē kāyáár ‘... to be beautiful.’
INCP	jēn kóm ‘The person chops.’	jēn kāyáár ‘... is beautiful.’
COMP	jēn kóm- só ‘The person chopped.’	jēn kāyáár- sá ‘... was beautiful.’
CONT.N	jēn kóm- án ‘The person was chopping.’	jēn kāyáár- án ‘... was beautiful.’
Following	á nām jēn ná kóm = é	á nām jēn ná kāyáár = é
REL	‘I want the person who chops.’	‘... is beautiful.’

However, in verb paradigms such as the incomplete forms of (35), the long forms of subject pronouns precede the adjectival verb instead of short subject pronouns as in true verbs. The plural adjective suffix *-gg* and copular clitic *=A* attach to adjectival verbs of plural persons, whereas these bound morphemes are not attached to any true verb forms.

(35) **Incomplete paradigms of active verb and adjectival verb compared**

(a) ‘___ chop, cut’	(b) ‘___ am/are/is beautiful’
á kóm 1sN	āān kāyáār 1sN
ó, ú = kúm 2sN	ōōn kōyōōr 2sN
ē kóm 3sN	ēēn kāyáár 3sN
āgg kóm 1pN	āggá kāyáár-g = ā 1pN
ōgg, ūg = kúm 2pN	ōggó kōyōōr-g = ō 2pN
ēggà kôm 3pN	ēggà kāyáár-g = à 3pN

The adjectival verb *kāyáār* of (35) has subject tone inflection (final Mid for second person, final High for third singular, and final Low for third plural) and [+ATR] second person forms, as do true verbs. However, in some adjectives used as verbs, person inflection is not as regular as the adjectival verb paradigm in (35). Second plural forms of some adjectival verbs have Low final tone instead of Mid (*kóófār*, *kúúfār-g* = *ə* ‘thin.INCP-2pN=COP’) and second person forms of some adjectival verbs have [-ATR] quality instead of [+ATR] (*bánḍāl*, *bánḍāl-g* = *ā* ‘weak.INCP-2pN=COP’). These features mark adjectives as being different than true verbs.

Since adjectives have some differences in syntax and morphology compared to both nouns and verbs, they are analyzed as a separate category. Adjective clitic morphology similar to that of noun morphology is presented in 8.3, whereas

adjective morphology similar to verb morphology is presented in 10.11.

In the following chapters, word categories are discussed one-by-one. For each, we first discuss the function followed by the forms of morphemes attached to roots or stems. Because possessive pronouns are important for the discussion on nouns and verbs, pronouns in general are discussed first, followed by nouns, adjectives, verbs, prepositions, locatives, and adverbs. Each of these is a lexical category, as are conjunctions discussed in 15.2.

5 Pronouns

The pronoun system in Gaahmg distinguishes three persons, two numbers (singular and plural), and six cases (possessive, subject, object, dative, reflexive, prepositional). There is no dual, no gender distinction, no inclusive/exclusive distinction, and no logophoric distinction. As expected in an SVO language, subject pronouns are pre-verbal and object and dative pronouns are post-verbal. Possessive pronouns are pre-nominal for inalienable nouns and post-nominal for alienable nouns. Prepositional pronouns have the prepositional marker prefix *ɔ̃-* and reflexive pronouns make use of the possessed noun ‘body’.

There are two distinct ways that pronouns affect verbs through [ATR] quality: second person subject morphemes require verb forms to have [+ATR] vowel quality as discussed in 5.3, and dative suffixed pronouns spread [+ATR] vowel quality leftward onto the verb root {M3}, as discussed in 5.5.

The six types of pronouns are each discussed in their own section, but first, an explanation is needed for the vowel-person correspondence in all pronouns. Interrogative pronouns are not discussed in this chapter, but in 15.3 in the chapter on sentence level syntax.

5.1 Person and number markers

Pronouns in Gaahmg, regardless of case or number, use vowel features to represent the person referred to. Depending on the type of pronoun, the vowel may be either [+ATR] or unspecified for [ATR], and the three persons coincide with the language's three vowel harmony pairs as shown in (1): [+back, -round] vowels represent first person, [+round] vowels represent second person, and [-back] vowels represent third person. Pronouns are marked for plural number agreement with the velar geminate segment *-gg-*.

(1) Person marker vowel pairs in pronouns

Vowel features	Vowel pairs	Person indicated
[+back, -round]	a, ɔ̃	1 st person
[+back, +round]	ɔ, u	2 nd person
[-back, -round]	e, i	3 rd person

The abbreviations used for pronouns are as follows in order of appearance: 1, 2, or 3 refers to person; s or p refers to singular or plural person number; P, N, A, D, R, O refers to possessive, subject (or nominative), object (or accusative), dative, reflexive, or prepositional case (object of a preposition); and in possessive pronouns, final s or p refers to singular or plural noun agreement. For example, the pronoun *māâ ɔ̃n(è)* ‘my (1sPs) house’ indicates the first person singular possessive pronoun agreeing

with a singular noun, and the pronoun *máàgg ánnàgg(à)* ‘my (1sPp) houses’ indicates the first person singular possessive pronoun agreeing with a plural noun. For reference, the list of table 7 presents the most basic pronoun forms of this chapter.

Table 7: Basic pronoun forms

Infinitive	Possessive (body parts) (P)	Long subject (N)	Short Subject (N)	Subject future (N)	Object (A)	Dative (D)	Reflexive (R)	Prepositional (O)	
ā	ā	āān	á	ā	a	-ān -ān	āān	-áán(á)	1s
ō	ō	ōōn	ó ó =	ō ō =	-O	-ūn -ūn	ūūn	-óón(ó)	2s
ē	ē	ēēn	ē	ē	-E -E	-īn -īn	īīn	-éēn(á)	3s
à(gg)	āgg	āggá	āgg	āggá	aaggá āāggá	-āggón -āggōn	āān-g	-āggá	1p
ò(gg)	ōgg ūgg	ōggó ūggó	ōgg ōggó =	ōggó ōggó =	-OOggÓ -ÓOggÓ	-ūggún -ūggūn	ūūn-g	-ōggó	2p
è(gg)	ēgg	ēggá	(ēgg)	ēggá	-EEggÀ -ÉÈggÀ	-īggòn -īggòn	īīn-g	-ēggè	3p

5.2 Possessive pronouns

There are two sets of possessive pronouns, one used with inalienable nouns—body parts and kinship terms—the other with alienable nouns. The two sets have different syntax. The inalienable set precedes the noun, the alienable set follows it. The examples of (2-4) demonstrate the order of possessors and possessed nouns.

(2) Pre-nominal possessive pronouns: body parts

- (a) nām ūgg nālg
break 2pPp necks
‘They will break your necks.’ (Thng23)

- (b) ānēndá Tēl ē kúnd=ú¹⁸ ē áđ ē wáēđá
 then God 3sPs heart=DEF 3sN becomes with joy
 ‘Then, God will be pleased (lit. Then God’s his heart, it becomes with joy).’
 (Womn17)

(3) **Pre-nominal possessive pronouns: kinship terms**

- (a) ð ́ yáā nāā néé lēēn-án dūmùùn ɖ-ūūŋ tà
 and 2sPs mother girl this was.coming towards PP-2sO there
 ‘Your mother’s sister (lit. your girl mother) was coming to you there.’
 (Assa3-4)

- (b) ɔðɔgg, àdɖà é kɔr ɖ-ɔggɔ jĩð-àgg=ɔ
 women live GP word PP-2pPp husband-PL=DEF
 ‘Women, if you live only by your husbands’ orders.’ (Womn21)

(4) **Post-nominal possessive pronouns**

- (a) mɔsɔr ŋĩnĩ bēl àsúūr.
 horse 3sPs named Asuur
 ‘His horse was called Asuur.’ (Minj10)
- (b) bii fiŋáɖɔ kɔr ɔn ní mā mɔp!
 let hear word 1sPs this very carefully
 ‘Listen to my words very carefully!’ (Womn3)

5.2.1 Possession of alienable nouns

Possessive pronouns of alienable nouns are given in (5). Alienable possessive pronouns agree with the noun they follow in both singular and plural number. The singular marker *-n* is only found in alienable possessive pronouns and in long subject pronouns (see 5.3), whereas the plural marker *-gg* is used in all plural pronouns. The plural person pronouns are distinguished from the singular person

(5) **Possessive paradigm for alienable noun *máà* / *máàgg* ‘house’**

	Singular person pronouns			Plural person pronouns		
Noun SG	máà	ɔn(=ə)	1sPs	máà	ɔyən(=ə)	1pPs
	máà	ún(=ù)	2sPs	máà	ūyùn(=ù)	2pPs
	máà	ĩnĩ(=n)	3sPs	máà	ĩyənĩ(=n)	3pPs
Noun PL	máà-gg	ɔnəgg(=ə) ¹⁹	1sPp	máà-gg	ɔyəgg(=ə)	1pPp
	máà-gg	únùg(=ù)	2sPp	máà-gg	ūyùgg(=ù)	2pPp
	máà-gg	ĩnìgĩ(=n)	3sPp	máà-gg	ĩyàggĩ(=n)	3pPp

¹⁸ The construction of (2b) has both a noun (*Tēl* ‘God’) and pronoun (*ē* ‘his’) possessor of the body part *kúndú* ‘heart’. See 14.9.3 for nominal possession of body parts.

¹⁹ Or *ɔngə*

pronouns with the segment *y*, and initial tone of singular person possessives is High, whereas initial tone of plural person possessives is Mid. Third person possessives have a final vowel with Mid tone. Vowels and consonants in parentheses are copular clitics, attached when the possessive pronouns are comments of a stative clause ('The cow is mine'). They are discussed further in section 14.6.1.

5.2.2 Possession of inalienable nouns: body parts

Possessive pronouns for body parts are given in (6). In Gaahmg, body parts are inalienable nouns with possession formed by an independent possessor pronoun preceding the possessed noun. In (6), the body part 'cheek' is listed in singular and plural forms with all possible possessive pronouns. The dashed line represents constructions that do not exist. The [+ATR] value of the plural suffix *-əgg* spreads leftward onto the noun root in accordance with {M3} of 3.2, but not onto the independent possessive pronoun preceding the noun. The plural person pronouns are distinguished from the singular person pronouns by the plural marker *gg*. Second person possessives of plural body parts can be [+ or -ATR]. The tone of all possessive pronouns of body part nouns is Mid.

(6) **Possessive paradigm for inalienable body part *fāṇḍ* / *fāṇḍəgg* 'cheek'**

	Singular person pronouns			Plural person pronouns		
Noun SG	<i>ā</i>	<i>fāṇḍ</i>	1sPs	---		1pPs
	<i>ō</i>	<i>fāṇḍ</i>	2sPs	---		2pPs
	<i>ē</i>	<i>fāṇḍ</i>	3sPs	---		3pPs
Noun PL	<i>ā</i>	<i>fāṇḍ-əgg</i>	1sPp	<i>āgg</i>	<i>fāṇḍ-əgg</i>	1pPp
	<i>ō, ū</i>	<i>fāṇḍ-əgg</i>	2sPp	<i>ōgg, ūgg</i>	<i>fāṇḍ-əgg</i>	2pPp
	<i>ē</i>	<i>fāṇḍ-əgg</i>	3sPp	<i>ēgg</i>	<i>fāṇḍ-əgg</i>	3pPp

In addition, the nouns possessed by plural persons take a different tone pattern than that of nouns possessed by singular persons. As is discussed further in 6.4, the plural person morpheme requires LM tone pattern to surface for possessed body part nouns.

5.2.3 Possession of inalienable nouns: kinship terms

The possessive pronouns of kinship terms are identical to those of body part nouns, except for tone. Whereas all possessive pronouns of body part nouns have Mid tone, first and second singular person pronouns of kinship terms have High tone. And in contrast to body parts, the tone of kinship terms possessed by plural persons is the same as those possessed by singular persons.

(7) **Possessive paradigm for inalienable kinship term*****ṭááðà / ṭááðàḍ* ‘grandmother’**

	Singular person pronouns			Plural person pronouns		
Noun SG	á	ṭááðà	1sPs	āgg	ṭááðà	1pPs
	ó	ṭááðà	2sPs	ōgg	ṭááðà	2pPs
	ē	ṭááðà	3sPs	ēgg	ṭááðà	3pPs
Noun PL	á	ṭááðàḍ	1sPp	āgg	ṭááðàḍ	1pPp
	ó, ú	ṭááðàḍ	2sPp	ōgg, ūgg	ṭááðàḍ	2pPp
	ē	ṭááðàḍ	3sPp	ēgg	ṭááðàḍ	3pPp

5.2.4 Inherently possessed body part nouns

For most inalienable nouns, possessive pronouns are separate from the nouns they precede, evidenced by a lack of [+ATR] spreading from roots to the preceding pronoun {M3}. However, there is a special set of body parts in which the possessive pronoun is attached to the noun. These body part nouns do not occur without being possessed by someone, and can be referred to as ‘inherently possessed’ body parts (Payne 1997:105-106). Unlike other body part nouns, speakers cannot say ‘eye’, ‘hand’, ‘head’, etc. without also including the possessor along with the noun (i.e. ‘his eye’, ‘my eye’, ‘your eye’, etc.).

An exhaustive list of inherently possessed body parts is shown in (8). Those that are used as locatives, as described in chapter 11, have asterisks next to them. The root contains only a consonant, except for (g) which has no root segment. A possessive person marker long vowel *VV-* is prefixed to the root in all singular forms as well as in plural forms of all but the body part nouns of (a-b). In the plural forms of (a-b), a person marker short vowel *V-* is prefixed to the root. All vowels of each possessed body part noun refer to the person possessing it, corresponding with the three vowel pairs of the language: *a* or *ə* for first person, *o* or *u* for second person, and *e* or *i* for third person. The [+ATR] quality of the plural suffixes *-⁺gg* or *-⁺V⁺gg* spreads leftward onto the noun root {M3}. Further, the vowel of the suffix is underlying unspecified for any other feature, and takes the features of the person morpheme—*a*, *u*, or *i*, depending on the person possessing the body part. The body parts of (f-g) have both a singular and plural suffix.

(8) **Possessive paradigms of ‘inherently possessed’ body part nouns**

	Root	N SG, SG person	N PL, SG person	N PL, PL person	
(a)	/ḍ/	āā-ḍ	1sPs	ó-ḍ-ōgg	1sPp
		ōō-ḍ	2sPs	ú-ḍ-ūgg	2sPp
		ēē-ḍ	3sPs	í-ḍ-igg	3sPp
(b)	/s/	áā-s	1sPs	ó-s-ōgg	1sPp
		óò-s	2sPs	ú-s-ūgg	2sPp
		ēē-s	3sPs	í-s-igg	3sPp

(c)	/l/	āā-l	1sPs	àà-l-g	1pPp	'head'*
		ṣṣ-l	2sPs	ùù-l-g	2pPp	
		ēē-l	3sPs	ìì-l-g	3pPp	
(d)	/ɲ/	āā-ɲ	1sPs	àà-ɲ-g	1pPp	'back'*
		ṣṣ-ɲ	2sPs	ùù-ɲ-g	2pPp	
		ēē-ɲ	3sPs	ìì-ɲ-g	3pPp	
(e)	/ŋ/	āā-ŋ	1sPs	àà-ŋ-g	1pPp	'body'*
		ṣṣ-ŋ	2sPs	ùù-ŋ-g	2pPp	
		ēē-ŋ	3sPs	ìì-ŋ-g	3pPp	
(f)	/l/	āā-l-g	1sPs	àà-l-g	1pPp	'stomach'*
		ṣṣ-l-g	2sPs	ùù-l-g	2pPp	
		ēē-l-g	3sPs	ìì-l-g	3pPp	
(g)	/ /	āā-gg	1sPs	àà-gg	1pPp	'mouth'
		ṣṣ-gg	2sPs	ùù-gg	2pPp	
		ēē-gg	3sPs	ìì-gg	3pPp	

Although all the body part nouns of (8) have an initial vowel, they are not considered a special set of nouns because of the initial vowel, but because of the possessive pronoun being a part of the noun and because of the vowel harmony changes for the entire possessive construction. There are two attested body part nouns which have a vowel-initial root but for which the possessive pronoun is not a part of the noun and for which there is no change in vowel harmony: *ā ààmāṣ* 'my liver', *āgg ààmāṣ-gg* 'our livers'; *ā il* 'my horn', *ā il-ààgg* 'my horns', *āgg il-āṣgg* 'our horns'.

The root tone of the nouns in (8) is Mid with the exception of (b) which has HL tone. The nouns possessed by plural persons all have L(M) tone. The plural nouns 'eyes' and 'hands' (a-b), possessed by singular persons, have HM tone melody.

5.3 Subject pronouns

Subject pronouns precede the verb and have the semantic roles of agent or experiencer, except in passive clauses when they have the roles of patient or theme. They are independent of the verb and are most often realized in short form. Long, short, future and infinitive subject pronouns for each of three persons, singular and plural, are listed in (9). Future tense is marked on the subject pronoun by tone difference from non-future subject pronouns. A separate set of pronouns with differing tone precedes non-clause-initial infinitive verbs. As will be discussed shortly, second person pronouns of finite verbs are optionally clitics which attach to verbs.

(9) **Subject pronouns**

Long	Short (non-future)	Future	Infinitive	
āān	á	ā	ā	1sN
ōōn	ó, ó =	ō, ō =	ō	2sN
ēēn	(ē)	é	ē	3sN
āggá	āgg	āggá	à(gg)	1pN
ōggó	ōgg, ōgg =	ōggó, ōggó =	ò(gg)	2pN
ēggà	(ēgg)	ēggà	è(gg)	3pN

Long subject pronouns are most common in nominal clauses such as in (10). They are rare otherwise.

(10) **Long subject pronouns**

- (a) á bēē “wá, **āān** ūṇúūr = ú wá.”
 1sN said no 1sN Arab = DEF not
 ‘I replied, “No, I am not an Arab.”’ (Jooj6)
- (b) mān ná ón = í **ēēn** tū wá
 one which bad = REL it.is true not
 ‘Nothing bad will happen
 (lit. the one thing which is bad is not there).’ (Fand23)

Sometimes, the short subject pronouns co-occur with a long subject pronoun as in (11) for added emphasis to the subject.

- (11) **āān** á bīn dí, “ò **ōōn** ú = jìs-sò níí dí tē = ā?”
 1sN 1sN said also and 2sN 2sN = did what also here = DEF
 ‘I myself also asked him, “And you, what are you doing here?”’ (Jooj8)

Third person short subject pronouns occur along with noun subjects such as in (12) to indicate a switch in reference or to give emphasis to the subject.

- (12) jēn ē bīl = ì d-ē kúnd
 person 3sN shot = him PP-3sP chest
 ‘A person shot him in his chest.’ (Fand30)

In narratives, the short pronouns are commonly used alone to reference the same subject as in the previous clause. Sometimes third singular person subject pronouns are used to reference third plural person with the same subject as the previous clause. Although not that frequent, third person subject pronouns can be dropped. In such instances, the zero pronoun reference is normally recoverable from context. The tone of the verb form distinguishes third singular and plural persons, as described in section 9.8.

In (13), short subject pronouns precede a [-ATR] verb root, and in (14) precede a [+ATR] verb root. First and third subject pronouns are always [-ATR] regardless of the vowel quality of the verb root.

(13) **Paradigm of short subject pronouns on continuous non-past verb *kóm-ân* ‘cut, chop’**

á	kóm-ân	1sN	āgg	kóm-ân	1pN
ó	kúm-ân, ú = kúm-ân	2sN	ōgg	kúm-ân, ūg = kúm-ân	2pN
ē	kóm-ân	3sN	ēgg	kóm-ân ²⁰	3pN

In second person forms of finite verbs, the (root) vowel is always [+ATR] regardless of the vowel quality of the verb root. Verb roots as in (13) that are otherwise [-ATR] become [+ATR] in the second person verb forms. In the verb of (13), the vowel that surfaces as *ɔ* in other persons becomes *u* in the second person; the vowel that surfaces as *a* in other persons becomes *ə* in the second person.

Second person subject pronouns are optionally [+/- ATR] regardless of the [ATR] quality of the root vowel. Those which surface as [-ATR] are analyzed as separate from the verb. Those which surface as [+ATR] are analyzed as clitics attached to the verb, becoming [+ATR] through leftward spreading from the [+ATR] second person verb form {M3}.

(14) **Paradigm of short subject pronouns on completive verb *bìlqə* ‘hit’**

á	bìlqə	1sN	āgg	bìlqə	1pN
ó	bìlqə, ú = bìlqə	2sN	ōgg	bìlqə, ūg = bìlqə	2pN
ē	bìlqə	3sN	ēgg	bìlqə	3pN

First and third subject pronouns are independent, even though they are short, evidenced by the fact that [+ATR] quality does not spread leftward to the pronouns from the [+ATR] verb form in the paradigm of (14) as it does in second person forms {M3}. Example (6) demonstrated how [+ATR] quality does not spread onto independent possessive pronouns, either.

Other support for the short first and third subject pronouns not being prefixes or clitics is seen in (15), where leftward [+ATR] spreading from the suffixed dative pronoun in (b) does not spread onto the subject pronoun. Since [+ATR] quality spreads without limit within the word {M3}, the preceding pronoun is analyzed as being separate. This example of a dative clitic will be discussed further in section

²⁰ As discussed in 9.1, singular and plural third person subjects are distinguished by tone on the verb itself as seen in (13) of this section where first and second person verb forms have final Mid tone, the third singular form has final High tone, and the third plural form has final Low tone. In (14), the final Mid tone on first and second verb forms assimilates to the root Low tone {M9} and the final High tone on the third singular form is lowered to Mid following Low root tone {M9}.

5.5.

- (15a) á gàðsà ūnū mīf (b) á gə̀ð̀s=ū mīf
 1sN gave 2sD chicken 1sN gave=2sD chicken
 ‘I gave you a chicken.’ ‘I gave you a chicken.’

As will be shown in 9.2, infinitive verb forms do not inflect for person, neither in tone nor in [ATR] quality, and subject pronouns are never attached to such verbs. Third person agents (or experiencers) can also follow the verb in prepositional phrases and in genitive case, and are discussed in 10.2 and 14.5.1.

5.4 Object pronouns

Second and third person object pronouns are suffixed to verbs as shown by the examples of (16). They have the roles of patient, theme, or experiencer.

(16) Object pronoun clitics

- (a) ē lā gə̀f=i wá
 3sN UNC /gə̀f/give.INCP=3sAM not
 ‘He would not give it.’ (Fand3)
- (b) é də̀j-t āggá é mīd-əg fə̀rə̀j wá bə̀=i
 3sN /də̀j/stone-INF 1pA by stone-PL few not oh=SBO
 ‘When it pelted us with a lot of stones, . . .’ (Thng20)
- (c) ē mār-ən=ŋggə dūmù̀n é gə̀ð̀r
 3pN /mār/sold.CAUS-CONT=3pAM towards to clan.name
 ‘. . . to sell to them far away past the Goor clan.’ (Minj3)

Unlike dative pronouns, second and third object pronouns never occur independently, but only as bound morphemes to verb stems. Further, a noun object cannot occur along with an object pronoun. Examples (17b) and (d) are ungrammatical.

(17) Object pronoun examples

- (a) jēn gə̀ð̀-sā mīi=n (b) *jēn gə̀ð̀-sā ē(ēn)
 person give-COMP goat=DEF person give-COMP 3sA
 ‘The person gave the goat.’ ‘The person gave it (goat).’
- (c) jēn gə̀ð̀-s=i (d) *jēn gə̀ð̀-s=i mīi=n
 person give-COMP= person give-COMP= goat=DEF
 3SAM 3SAM
 ‘The person gave it (goat).’ ‘The person gave it (goat).’

Second and third person unmarked object pronouns take the [ATR] quality of the stem. First person object pronouns are analyzed as separate morphemes since they remain [-ATR] regardless of the quality of the root to which they follow. Most objects have more than one tonal allomorph for different subject person verbs to which they attach. Tone of object pronouns is discussed further in 10.4.2.

(18) **Unmarked object pronouns**

Singular person pronouns	Plural person pronouns
a 1sA	aaggá, áaggá 1pA
=O 2sA	=OOggÓ, =ÓŌggÓ 2pA
=E, =Ē 3sA	=EEggÀ, =ÉĒggÀ 3pA

There are two types of third person object pronouns, although the exact distinction in function is not clear. For lack of better terms, they are called ‘marked (AM)’ and ‘unmarked (A)’ object pronouns in this thesis in accordance with their distinction in vowel quality. The unmarked third person pronouns of (18) are unspecified for [ATR], the same as first and second person object pronouns, and the marked third person pronouns of (19) are [+ATR]. As with unmarked object pronouns, the marked pronouns have more than one tonal allomorph for different subject person verbs to which they attach. These are also further discussed in 10.4.2.

(19) **Marked third person object pronouns**

Singular person pronouns	Plural person pronouns
=i, =ì, =îggì 3sAM	=iiggò, =ìiggò, =îggò 3pAM

The marked and unmarked object pronouns are both used to indicate patients, as shown in (20).

(20) **Unmarked object**

- (b) jēn bēl-d = ē
 person beat-COMP = 3SA
 ‘The person beat it (goat).’

Marked object

- (c) jēn bīl-d = ì
 person beat-COMP = 3SAM
 ‘The person beat it (goat).’

However, the marked and unmarked third person object pronouns can be used to distinguish types of subordinate clauses introducing the referent to which the third object pronoun refers. In (20a), the unmarked [-ATR] object pronoun attached to *wár-s* = ē ‘take-COMP=3sA’ refers to the noun *páré* = n ‘bag=DEF’ introduced in the subordinate ‘if’ clause, whereas in (b) the marked [+ATR] object pronoun refers to a noun introduced by the subordinate conjunction *é gārā* ‘when’. In 10.7, the verbs of these subordinate clauses will be shown to take different subordinate clitics and are grammatically distinct.

(20) **Third singular marked and unmarked object pronouns**

- (a) $j\bar{a}\bar{a} = n$ \bar{e} $\eta\bar{a}\eta - s = \bar{e}$ $p\bar{a}r\acute{e} = n = \acute{e}$, \acute{a} $l\acute{e}\bar{e}$ $w\bar{a}r - s = \bar{e}$
 person 3sN file-COMP bag = DEF 1sN come. take-COMP
 = DEF = SBO2 = SBO INCP = 3sA
 ‘If the person filed the leather bag, I will come take it.’
- (b) \acute{e} $g\bar{a}r\acute{a}$ $j\bar{a}\bar{a} = n$ $\eta\bar{a}\eta - s = \bar{i}$ $p\bar{a}r\acute{e} = n = \acute{e}$, \acute{a} $l\acute{e}\bar{e}$ $w\acute{o}r = \bar{i}$
 (GP) person / $\eta\bar{a}\eta$ /file-COMP bag = DEF 1sN come. take.INCP
 when = DEF = SBO1 = SBO INCP = 3sAM
 ‘When the person has filed/sanded the bag, I will come take it.’

5.5 Dative pronouns

The dative pronouns have the semantic roles of beneficiary or recipient as seen in the examples of (21)

(21) **Dative pronoun clitics**

- (a) \acute{a} $b\bar{i} = \textbf{\acute{i}gg\bar{a}n}$ “wá!”
 1sN / $b\bar{e}\bar{e}$ /tell.INF = 3pD no
 ‘I told them “No!”’ (Thng21-22)
- (b) $\bar{i}\bar{g}g = \acute{o}$ \bar{e} $m\bar{a}l = \textbf{\acute{i}n\bar{a}}$ $f\bar{a}n$ $\bar{t}\bar{a}\bar{d}$
 milk = DEF 3sN / $m\bar{a}l$ /gather.INCP = 3sD on down
 ‘Milk accumulated for him underneath.’ (Fand24)
- (c) $j\bar{g}g$ $g\bar{o}r = \acute{o}$ $b\bar{a}$ $\acute{o}s - s = \textbf{\acute{g}gg\bar{a}n}$ $j\bar{e}gg$ $\acute{a}n - g = \bar{i}$
 people Goor = DEF oh / $\acute{a}\bar{d}$ /become-COMP = 1pD things bad-PL = RDM
 ‘The Goor tribe became our enemies (lit. to us bad things).’ (Minj6)

Dative pronouns are normally suffixed to verbs, but in slow speech are separate and immediately follow the verb. As will be discussed in 10.5.2, there are tonal allomorphs for different subject person verbs to which the dative pronouns are attached.

(22) **Dative pronouns**

Singular person pronouns			Plural person pronouns		
Separate	Attached		Separate	Attached	
$\acute{a}n\bar{a}$	= $\acute{a}n$, = $\acute{a}n$	1sD	$\bar{a}gg\bar{a}n$	= $\bar{a}gg\bar{a}n$, = $\bar{a}gg\bar{a}n$	1pD
$\acute{u}n\bar{u}$	= $\acute{u}n$, = $\acute{u}n$	2sD	$\bar{u}gg\bar{u}n$	= $\bar{u}gg\bar{u}n$, = $\bar{u}gg\bar{u}n$	2pD
$\acute{i}n\bar{a}$	= $\acute{i}n$, = $\acute{i}n$	3sD	$\bar{i}gg\bar{a}n$	= $\bar{i}gg\bar{a}n$, = $\bar{i}gg\bar{a}n$	3pD

As previously mentioned and as seen in (23b), the [+ATR] value assigned to the dative pronoun spreads leftward onto the root {M3}. There is no such harmony with independent dative pronouns as seen in (23a).

- (23a) \bar{e} gàð-sà **ǃnũ** mĩí (b) \bar{e} gàù-s=**ǃ** mĩí
 3sN gave-COMP **2sD** chicken 3sN gave-
 COMP=**2sD** chicken
 ‘He gave you a chicken.’ ‘He gave you a chicken.’

Similar to object pronouns, dative pronouns do not occur along with a dative noun as in (24).

- (24) *jēn gə̀ù-s=ɿn mī-n kāmàlògg=ān
 person give-COMP=3SD goat-DEF woman=DAT
 ‘The person gave the goat to the woman.’

Although the dative noun and object noun can have either order in a clause as in (25a), the independent dative pronoun must immediately follow the verb when occurring along with a noun object. For example, the independent pronoun following the noun object in (25c) is ungrammatical.

- (25a) jēn gàd-sā mīin kàmàlògg = ān / kàmàlògg = ān mīin
 person give- goat. woman=DAT / woman=DAT goat.
 COMP DEF
 ‘The person gave the woman the goat.’
- (b) jēn gàd-sā **ín̩** mīin (c) *jēn gàd-sā mīin **ín̩**
 person give- 3SD goat. person give- goat. 3SD
 COMP DEF COMP DEF
 ‘The person gave her the goat.’ ‘The person gave her the goat.’

When an imperfect suffix such as $=\acute{E}$ in (26a) or an object pronoun such as $=\acute{i}$ in (b) are attached to the verb, the independent dative pronoun can follow the verb word.

- (26a) á nām háshim = á
 1sN /nām/want.INCP Hashim = DEF
 ‘I want Hashim
- ā jìd-dṣ ò ā wár-d = é 5nṣ ráḍè.
 SBJV make and SBJV bring 1sD radio
 /jìs/-SBJV.3sN /wár/-SBJV = IPF.3sN
 to get me a radio.’ (Assa11-12)
- (b) tél gṵ-s = i ūggūn gāfā ē jṵ màrèè
 God gave-them 2pD given by only somehow
 /gāf/COMP = 3sAM /gāf/NOM.SG
 ‘God has given them to you for good reason.’ (Womn6)

(27) **Object and dative pronouns in the same clause**

- In (28), the full paradigm of suffixed dative pronouns is shown attached to a completive verb. The completive verb without the dative pronoun and object are shown in (a), and the paradigm with dative suffix, assuming the same noun object, is given in (b). In (a), the root vowel surfaces as *ɔ*, but in (b) becomes *u* with the attached [+ATR] dative suffixes {M3}. In such examples, the vowel of the completive suffix does not surface, as suffix vowels are elided by the initial vowel of following suffix, as stated by the verb elision rule of {M1} in 3.1. Other dative pronoun paradigms on verb forms are shown in 10.8.

(a)	kóm-sō	māgəld			'He cut-COMP a stick.'
(b)	kúm-s=ō	-COMP=1sD	kúm-s=ōgən	-COMP=1pD	
	kúm-s=ū	-COMP=2sD	kúm-s=ūgún	-COMP=2pD	
	kúm-s=ī	-COMP=3sD	kúm-s=īgən	-COMP=3pD	

In Gaahmg, the reflexive pronoun is used as an object that is referentially identical to the subject. In (29a, b), the reflexive indicates the object which is the same

referent as the subject. However in (c), the reflexive meaning is extended and the reflexive is used as a repeated object for emphasis. Instead of referring back to the subject, it refers back to the object. In (29c), the plural noun *ɣɔgg* ‘people/officials’ and the third plural reflexive *ìng* are objects of the verb *máð* ‘refuse’. The noun *ɣɔgg* represents the government and is emphasized with the reflexive, possibly because of previous bad encounters with them. Reflexives are not found to be used as repeated subjects.

(29) **Reflexive pronoun examples**

- (a) “sàlàð = ā”, ē bèè, “ū = wór **ūū** cābb ánēén”
 Hyena = DEF 3sN say 2sN = carry 2sR up like.this
 ‘“Hyena”, he said, “Make yourself upright.”’ (Nye32)

- (b) ē máà **īī** ē àn mɔ̀sɔ̀r ɔ̀l
 3sN prides 3sR 3sN stay horse up
 ‘He takes pride in himself as he sits up on the horse.’ (Minj14)

- (c) ē máð ē²¹ ɣɔgg **ìng** é dāfā
 3sN refuse 3sN people 3pR by fighting
 ‘He refused (to give money to) the officials by fighting.’ (Fand4)

Reflexive pronouns are based on the inherently possessed word for ‘body’, which is *VVɣ*, where V is the person marker vowel. As discussed in 5.2.4, the word for body and a few other nouns cannot occur without possession using one of the person marker vowels. With such words the norm is for [-ATR] vowels to indicate singular persons, and for [+ATR] vowels as well as the plural suffix -gg to indicate plural persons. However, all reflexive pronouns are [+ATR], and the suffix -gg as well as Low tone indicate plural agreement.

(30) **Reflexive pronouns**

Singular person pronouns		Plural person pronouns	
əɔ̀ɣ	1sR	ə̀ə̀ɣ-g	1pR
ūūɣ	2sR	ùùɣ-g	2pR
īīɣ	3sR	ììɣ-g	3pR

5.7 Prepositional pronouns

Prepositional pronouns are objects of prepositions, or for another reason are prefixed by the preposition marker *ɣ*. The prepositional prefix takes the place of the general preposition *é, í* (GP) as in (31a-b) when introducing prepositional pronoun objects

²¹ The second pronoun *ē* ‘he’ in (c) is the only occurrence found of a post-verbal subject pronoun. Perhaps it is repeated for emphasis or there is an implied unstated verb ‘to give’ of which *ē* ‘he’ is the subject pronoun.

(see 11.4). However, the prepositional prefix is used in addition to an adverb functioning as a directional preposition such as *ḍūmùùn* ‘towards’ in (c). It is also used in addition to the animate accompaniment preposition *ε* ‘with’ and accompaniment clitic =*E* on the pronoun as shown in (d). The marker is also used to introduce verb objects when separated from the verb by a bound dative pronoun as in (e) or by other verbal suffixes.

(31) **Prepositional pronoun examples**

- (a) *jāām* *kòòm-s-ī* *ḍ-éēn* *wá*
 someone bother-COMP-PAS.A PP-3sO not
 ‘No one was bothered by it.’ (Thng25)
- (b) *jōgg* *ēgg* *śōī* *bà,* *ēgg* *wár* *jègg = ā* *ḍ-āggá* *kāē*
 people 3pN come oh 3pN take things=DEF PP-1pO all
 ‘When these people come, they take all (our) things from us.’ (Minj7)
- (c) *ò* *ó* *yāā* *ḡāā* *néé* *lèènnán* *ḍūmùùn* *ḍ-ūūḡ* *tà*
 and 2sPs mother girl this was.coming towards PP-2sO there
 ‘... and your mother’s sister was coming to you there.’ (Assa3-4)
- (d) *ò* *kár* *tāḍán* *è* *ḍ-ēgg = ē*
 and wildcow was with PP-3pO = ACM
 ‘... and a wild buffalo was with them.’ (Nyee4)
- (e) *ē* *gəl-ḍ = īn* *ḍ-éēn* *ná* *tád* *dí*
 3sN /gəl/ram-SBJV.3sN = 3sD²² PP-3sO REL.SG down also
 ‘... in order to break it down for them.’ (Nyee12)

Prepositional pronouns have the same segmental form as the long subject pronouns. However, in addition to taking the prefix *ḍ-*, prepositional pronouns are post-verbal and differ in tone from long subject pronouns.

(32) **Prepositional pronouns**

Singular person pronouns		Plural person pronouns	
-áán(á)	1sO	-āggá	1pO
-śón(ó)	2sO	-ōggó	2pO
-éēn(á)	3sO	-ēggè	3pO

Occasionally, the third singular prepositional pronoun is attached to a preposition or other word category without the prefix *ḍ-*. In (33), the pronoun *-éēn* is shortened to *-ē* on the preposition *tád-ē* ‘down’ and literally means ‘down of it (egg’s head)’.

²² As with subject pronouns, third singular dative pronouns are sometimes used for third plural referents.

attach the same prepositional prefix *d-* as other prepositional pronouns, they are also analyzed as prepositional pronouns rather than as mere locatives.

In (35a), the locative prepositional pronoun *d-éél* ‘on-it’ is close in form to the inherently possessed body part noun *ēēl* ‘his.head’. If the meaning were ‘on its head’, the word *ēēl*, followed by the locative *śśl* ‘up’, would be used. In (b), the locative prepositional pronoun *d-ñ-mùù-gg* ‘in.front.of-them’ is used. In both of these examples, as well as in (34b), the third singular marked object pronoun =*i* is attached to the verb preceding the prepositional pronoun. In (35c), the third singular object pronoun represents a third plural referent.

(35) **Locative prepositional pronoun examples**

- (a) *bēl* *Mīñjibb* *tāéén* *ē* *dōds* *ē* *əbb=i* *d-éél*
 named Minjib then 3sN starts 3sN rides = 3sAM PP-on.3sO
 ‘. . called Minyjib rode his horse proudly (lit. rides it on it).’ (Minj13)
- (b) *ná* *ón=í* *ē* *pəl=i* *táđ* *d-ñ-mùù-gg*
 REL.SG bad = RDM 3sN fall = 3sAM down PP-3pO-front-PL
 ‘(thing) which is bad fell down in front of them
 (lit. falls to them down in front of them).’ (Thng8)

Just as the inherently possessed body part noun *VVŋ* ‘body’ is used as a reflexive pronoun, other inherently possessed body part nouns of 5.2.4 are used as locative prepositional pronouns, including the word *VVŋ* ‘body’ (for the meaning ‘under’)

(36) **Body part nouns and locative prepositional pronouns**

Person	Body part nouns			Locative prepositional pronouns		
	N SG	N PL		PREP	PREP	
				PRON SG	PRON PL	
1	<i>āāŋ</i>	<i>əəŋg</i>	‘body’	<i>-əəŋ</i>	<i>-əəŋg</i>	‘under’
2	<i>ōōŋ</i>	<i>ùùŋg</i>		<i>-úúŋ</i>	<i>-úùŋg</i>	
3	<i>ēēŋ</i>	<i>ììŋg</i>		<i>-ííŋ</i>	<i>-îîŋg</i>	
1	<i>āālg</i>	<i>əəlg</i>	‘stomach’	<i>-áálg</i>	<i>-əəlg</i>	‘inside’
2	<i>ōōlg</i>	<i>ùùlg</i>		<i>-óólg</i>	<i>-úùlg</i>	
3	<i>ēēlg</i>	<i>ììlg</i>		<i>-éélg</i>	<i>-îîlg</i>	
1	<i>āāl</i>	<i>əəlg</i>	‘head’	<i>-áál</i>	<i>-əəlg</i>	‘above’
2	<i>ōāl</i>	<i>ùùlg</i>		<i>-óál</i>	<i>-úùlg</i>	
3	<i>ēēl</i>	<i>ììlg</i>		<i>-éél</i>	<i>-îîlg</i>	
1	<i>āāŋ</i>	<i>əəŋg</i>	‘back’	<i>-áāŋ</i>	<i>-əəŋ</i>	‘behind’
2	<i>ōōŋ</i>	<i>ùùŋg</i>		<i>-óóŋ</i>	<i>-úùŋ</i>	
3	<i>ēēŋ</i>	<i>ììŋg</i>		<i>-ééŋ</i>	<i>-îîŋ</i>	
1	<i>mūū</i>	<i>mùùgg</i>	‘face’	<i>-āāmū</i>	<i>-əəmùùgg</i>	‘in front of’
2				<i>-úūmū</i>	<i>-úùmùùgg</i>	
3				<i>-éēmū</i>	<i>-îîmùùgg</i>	

with different tone than for reflexive pronouns. In (36), *mūū* ‘face’ is the only body part used as a prepositional pronoun that is not an inherently possessed body part.

6 Noun stem

6.1 Introduction

The noun word structure can be ordered according to the schemes of (1). The noun stem consists of the root and optional singular or plural suffixes. The noun word consists of the stem, and optional slots for copula (COP), definite (DEF), locative (LCM), dative (DAT), accompaniment (ACM), subordinate (SBO), and relative definite clause marker (RDM) clitics.

- (1) Noun stem = root + ({SG, PL})
 Noun word = [Noun stem] + ({COP, DEF, LCM, DAT, ACM, SBO, RDM})

Noun stem morphology (suffixes) is discussed in this chapter and noun word morphology (clitics) is discussed in the next. All noun suffixes are inflectional number markers that have referential meaning, whereas the noun clitics indicate the role of the noun phrase within the syntactic context. Whereas inflectional suffixes cannot combine with each other (*SG-PL), all noun clitics can combine with the inflectional suffixes.

A primary distinction between suffixes and clitics is whether the element attaches to underlying-final segments or to surface-final segments. Stem suffixes attaching to noun roots attach to underlying-final segments, whereas word clitics attaching to noun stems attach to surface-final segments. Vowel length of root-final vowels is the primary indicator of whether the form is an underlying or surface representation. In (2), the plural suffix *-gg* attaches to the underlying short vowel in *ʈʂ-gg* ‘cow-PL’, whereas the accompaniment clitic attaches to the surface long vowel of the singular form (*ʈʂʂ = nē*).

(2) **Roots and stems compared**

Underlying	Surface	Noun stem	Noun word	
root	root	suffix	clitic	
UR	N.SG	N-PL	N.SG=ACC	
/ʈʂ/	ʈʂʂ	ʈʂ-gg	ʈʂʂ = nē	‘cow’

The same tone rules apply to most noun stem and noun word morphology. However, the starting point for noun stem tone assignment is the root tone, whereas the starting point of noun word tone assignment is the stem tone.

As discussed in 2.4.3, two-tone melodies on trisyllabic noun roots are assigned right-to-left. Thus, in the monomorphemic root *mʂggʂlèè* ‘maize’ of (3a), the Low tone of the HL melody surfaces on the final syllable, and the High tone of the melody surfaces on the first two syllables. Tone assignment for noun stems such as *ʃlʂbb-əgg* ‘water.spring-PL’ in (b) begins with the tone assigned to the root in the singular

form *ʃɪlɛbb* and spreads to the plural suffix *-Agg* having no underlying tone. If the root tone were not the starting point, right-to-left tone assignment would render the surface tone as **ʃɪlɛbb-ɛgg* instead of *ʃɪlɛbb-ɛgg*.

(3) **Roots, stem, and word tone assignment compared**

	N.SG	N-PL	N.PL=COP	
(a) HL root tone	móggólèè			‘maize’
(b) HL stem tone	ʃɪlɛbb	ʃɪlɛbb-ɛgg		‘water spring’
(c) HL word tone	ɪl	ɪl-ɛgg	ɪl-ɛgg=ɛ	‘horn’

Similarly, tone assignment for noun words such as *ɪl-ɛgg=ɛ* ‘horn-PL=COP’ in (3c) begins with the tone assigned to the stem in the plural form *ɪl-ɛgg* and continues by attaching the copular suffix *=ɛ* with Low tone. The noun stem tone assignment *ɪl-ɛgg* has the root tone *ɪl* as its point of departure where the second tone of the HL root melody is delinked and reassigned to the tone-less suffix *-Agg* {M2}. If the stem tone were not the starting point, the word tone would be different. For instance, if the root tone *ɪl* were the starting point, right-to-left tone assignment would render the surface tone as **ɪl-ɛgg=ɛ* instead of *ɪl-ɛgg=ɛ*. Or, if the HL underlying tones of the copular word form were assigned right-to-left, the surface tone would be **ɪl-ɛgg=ɛ* instead of *ɪl-ɛgg=ɛ*.

In summary, we can say there are four criteria for determining which noun bound morphemes are suffixes and thus a part of the stem, and which noun bound morphemes are clitics and thus outside of the stem, but a part of the word. In chapter 4, each of the morphemes listed in (4) below is shown to attach to more than one word category. As will be shown in the respective sections of chapter 7, all noun clitics attach to the inflectional suffixes. Also shown in the respective sections, the clitics attach to the surface-final segments. Finally, the stem tone assignment is the point of departure in tone assignment for the clitics. These criteria are not valid for the inflectional number suffixes. Thus, the clitics are analyzed as being a different kind of morpheme than the suffixes.

(4) **Criteria for determining that COP, DEF, LCM, DAT, ACM, SBO, RDM bound morphemes are clitics (stem morphemes) and not suffixes (root morphemes)**

- Attaches to more than one word category
- Attaches to inflectional morphemes
- Attaches to surface-final segments
- Stem tone assignment is the point of departure

Inflectional number marking with the suffix *-gg* occurs on both nouns and adjectives and is one possible exception of a suffix attaching to more than one word category, as do clitics. However, there are many other plural suffixes attaching to

nouns which do not attach to adjectives. In contrast, all allophonic clitics (with different forms and the same function) attach to each word category.

First, the segmental suffixes in plural formation are discussed in 6.2. Then the tonal allomorphs of various suffixes and tone assignment are discussed in 6.3. Body parts, a class of nouns which take special plural formation, are discussed in 6.4. Finally, the genitive case, which only involves a tonal change, will be presented in 6.5.

6.2 Segmental noun plural formation

In Gaahmg, there are singular and plural suffixes on nouns. While the vast majority of singular nouns do not have suffixes, plural marking is obligatory with plural referents. There are also a significant number of nouns that only have singular forms or only have plural forms. In addition, there are some nouns with variance between one or more suffixes on the nouns. However, there are no singular nouns with suffixes where the corresponding plural nouns are without suffixes.

Table 8: Noun Plural Formation

	N SG	N PL		Percentage
SG suffix/PL suffix	mōréé-ɖ	mōréé-gg	‘vegetable type’	5%
-/PL suffix	rīmáá	rīmáá-gg	‘star’	70%
Noun SG only	bùil	---	‘moisture’	15%
Noun PL only	---	īigg	‘milk’	10%

First we discuss singular suffixes in 6.2.1 and plural suffixes in 6.2.2-6.2.3. Irregular plural formation is shown in 6.2.4. Nouns with only singular forms and only plural forms are presented in 6.2.5. Finally, noun with varying suffixes are presented in 6.2.6.

6.2.1 Singular suffixes

Less than 5% of noun lexemes in the language²⁴ have singular suffixes. Although there are five attested singular suffixes, only -ɖ is not rare. All singular suffixes attach to root-final sonorants, and the suffix -ɖ also attaches to root-final vowels. The choice of the singular suffix has no semantic correlation with the noun to which it is attached. Virtually all nouns with singular suffixes also have plural suffixes. The plural suffixes attached to nouns presented in this section are the same as those presented in the following sections.

²⁴ Here and in following sections, percent of nouns means out all the noun lexemes in our data set.

Table 9: Singular Suffixes

Suffix	Final segment of root	N SG	N PL		# of nouns
-ḍ	vowel	rúnúú-ḍ	rúnúú-gg	‘bird type’	36
	sonorant	bàr-ḍ	bàr-àḍgg	‘lion’	6
-gg	sonorant	àḍr-g	àḍr-ēḍgg	‘priest, chief’	7
-Aḍ	sonorant	ṇíl-ḍḍ	ṇíl-g	‘intestine’	3
-AAḍ	sonorant	cāl-āāḍ	cāl-g	‘testicle’	1
-Eḍ	sonorant	ṇín-ḍḍ	ṇín-g	‘louse’	1

The most common singular suffix is *-ḍ*, which attaches to root-final vowels and sonorant consonants. There are 36 nouns attested with this suffix. In (5), the suffix is attached to root-final long and short vowels.

(5) **Singular suffix *-ḍ* attached to root-final long and short vowels**

UR-final	suffixes	N SG	N PL	
/aa/	-ḍ/-gg	wéráá-ḍ	wéráā-gg	‘tribe member’
/a/	-ḍ/-gg	bāsà-ḍ	bāsà-gg	‘large intestine’
/ə/	-ḍ/-gg	əṛṇə-ḍ	əṛṇə-gg	‘insect type’
/εε/	-ḍ/-gg	mḍréré-ḍ	mḍréē-gg	‘vegetable type’
/ε/	-ḍ/-gg	bórē-ḍ	bórē-gg	‘eye matter’
/ii/	-ḍ/-gg	mēmíí-ḍ	mēmíi-gg	‘root type’
/i/	-ḍ/-AAḍ	mḍī-ḍ	māy-ḍḍ	‘ancestor’
/ɔɔ/	-ḍ/- ⁺ gg	gḍḍ-ḍ	gùù-gg	‘excrement’
/uu/	-ḍ/-gg	rúnúú-ḍ	rúnúú-gg	‘bird type’
/u/	-ḍ/-gg	gərmù-ḍ	gərmù-gg	‘insect type’

It is less common for the singular suffix *-ḍ* to attach to root-final sonorant consonants. Only the nouns of (6) have been attested.

(6) **Singular suffix *-ḍ* attached to root-final sonorants**

UR-final	suffixes	N SG	N PL	
/n/	-ḍ/-gg	nḍn-ḍ	nḍn-g	‘demon’
/r/	-ḍ/-EEgg	mḍggḍr-ḍ	mḍggḍr-ēḍgg	‘cane’
/r/	-ḍ/-EEgg	bāār-ḍ	bāār-ēḍgg	‘abdomen, waist’
/r/	-ḍ/-EEgg	gḍūr-ḍ	gḍūr-īḍgg	‘stomach pouch’
/r/	-ḍ/-AAgg	bḍr-ḍ	bḍr-àḍgg	‘lion’
/r/	-ḍ/-AAgg	kḍr-ḍ	kḍr-ḍḍgg	‘bird type’

The singular noun suffix *-gg* is attached to the inherently possessed body part noun *āā-gg* ‘my mouth’, *ḍḍ-gg* ‘your mouth’, *ēē-gg* ‘his/her mouth’ discussed in 5.2.4 where the suffix attaches to the person marker vowel. Otherwise, only the nouns of (7-8) are attested with the singular suffix *-gg*, and in all of these, the suffix is attached to root-final sonorants.

(7) **Singular suffix *-gg* attached to root-final sonorants**

UR-final	Suffixes	N SG	N PL	
/r/	-gg/-EEgg	àðr-g	àðr-ēēgg	‘priest, chief’
/n/	-gg/-EEgg	ún-g	ún-íígg	‘tear’
/ð/	-gg/- <u>AA</u> gg	gððð-g [gððg _o]	gððð-ððgg	‘thief’
/l/	-gg/- ⁺ gg	ŋāl-g	ŋəl-g	‘neck’
/l/	-gg/- ⁺ gg	éél-g	ìil-g	‘my stomach/ our stomachs’

In the nouns of (8), the singular suffix *-gg* becomes *-ɟ* when attached to root-final palatals through an assimilation process. However, the plural suffix *-gg* attached to the same root is not assimilated. Thus, the process only applies to this singular suffix *-gg*.

(8) **Singular suffix *-gg* attached to root-final palatals becomes *-ɟ***

UR-final	Suffixes	N SG	N PL	
/ɲ/	-gg/- <u>AA</u> gg	bɛɲ-ɟ	bɛɲ-āāgg	‘side of something’
/y/	-gg/-A _o gg	māāy-ɟ	māāy-g	‘cucumber’

A handful of nouns have the singular suffixes *-Aɟ*, *-AAɟ* or *-Eɟ*, where *A* is a back vowel taking the [round] feature of the root {M4}, *A* is a non-rounded back vowel, and *E* is a front vowel. All of these singular suffixes attach to root-final sonorants.

(9) **Singular suffixes *-Aɟ*, *-AAɟ* and *-Eɟ* attached to root-final sonorants**

UR-final	Suffixes	N SG	N PL	
/l/	-Aɟ/-gg	ɲíl-ɔɟ	ɲìl-g	‘intestine’
/l/	-Aɟ/-gg	kól-ɔɟ	kól-g	‘egg’
/ŋ/	-Aɟ/-gg	túŋ-ɔɟ	túŋ-g	‘tribe member’
/l/	- <u>AA</u> ɟ/-gg	cāl-āāɟ	càl-g	‘testicle’
/ŋ/	-Eɟ/-gg	ɟín-íɟ	ɟín-g	‘louse’

6.2.2 Plural suffixes

Nearly all plural marking involves the segment *gg*. Plural suffixes may also have an initial short or long vowel, where a short vowel only occurs following root-final obstruents, and a long vowel only occurs following root-final sonorants or geminate velar plosive *gg*. Most plural suffixes have no semantic correlation with the nouns to which they attach. However, there are five suffixes which attach to a few nouns in the semantic sets of relational nouns or body parts. Most plural suffixes are unspecified for ATR, but there are two suffixes that are underlyingly specified as [+ATR] which spread their quality leftward to the root {M3}. Further, plural suffixes may have up to three tone patterns: no tone, M or H/HM. Plural suffixes with no semantic correlation to the root are presented in this section and plural suffixes correlated to semantic sets of nouns are presented in the following section.

(11) **Plural suffixes -*gg*, -*gg* on root-final vowels**

UR-final	N SG	N PL	
/aa/	wāā	wāā-gg	‘water, lake’
/əə/	wā̄	wā̄-gg	‘shade, help’
/oo/	póó	póó-gg	‘tree type’
/uu/	bùù	bùù-gg	‘chicken coop roof’
/εε/	rēē	rēē-gg	‘cotton, thread’
/ii/	mīí	mīí-gg	‘chicken’
/uə/	bū̄	bū̄-gg	‘tree type’
/a/	f̄yɔ́d̄á	f̄yɔ́d̄á-gg	‘planting seed’
/ə/	cííḥ̄	cííḥ̄-gg	‘Tabaldi leaf’
/ɔ/	m̄ḥ̄ḥ̄	m̄ḥ̄ḥ̄-gg	‘locust’
/u/	kúúfú	kúúfú-gg	‘ground sesame’
/aa/	wááyáá	wááyáá-gg	‘bird type’
/əə/	rīmáá	rīmáá-gg	‘star’
/εε/	káálḍéé	káálḍéé-gg	‘brother-in-law’
/ii/	kūsūmíí	kūsūmíí-gg	‘knee’
/oo/	páḥ̄ḥ̄	páḥ̄ḥ̄-gg	‘star’
/uu/	āyúú	āyúú-gg	‘local toothbrush’

In addition, there are four monosyllabic, open-syllable nouns with short vowels in the underlying representation. As discussed in 2.3.3, the vowels of all monosyllabic, open-syllable nouns are realized as long. The four nouns in (12) have short root vowels, which are realized as long in the singular form. However, when the plural suffix -gg with final consonant is attached to the underlying form, the vowel remains short. Since the final consonant *s* of (12d) does not surface in the singular form, the short vowel is realized as long.

(12) **Plural formation with monosyllabic, open-syllable nouns having underlying short vowels**

	Root	N SG	N PL	
(a)	/sá/	sáá	sá-gg	‘wine’
(b)	/ṭó/	ṭóó	ṭó-gg	‘cow’
(c)	/gḥ̄/	gḥ̄ḥ̄	gḥ̄-gg	‘clothing type’
(d)	/wés/	wéé	wís-ḍgg	‘house’

Plural suffix -*Agg*

The plural suffix -*Agg* attaches to underlying root-final obstruents, including various root-final consonant sequences and geminate plosives. About 17% of nouns take this suffix. The suffix vowel *A* is unspecified for roundness and takes the [round] quality of the root, in accordance with {M4} in 3.3. It is also unspecified for [ATR] and takes this feature from the root {M3}.

(13) **Plural suffixes -*Āgg*, -*Āgg*, -*Agg***

UR-final	N SG	N PL	
/bb/	ʃɪlabb	ʃɪlabb-əgg	‘water spring’
/d/	mīd	mīd-əgg	‘stone’
/d/	dɔd	dɔd-əgg	‘bird type’
/ʃ/	sīʃ	sīʃ-əgg	‘tree type’
/s/	tēndás	tēndás-āgg	‘bird type’
/nd/	órond	órond-əgg	‘fermented milk’
/ɲd/	ləɲd	ləɲd-əgg	‘tree type’
/ld/	cúld	cúld-ūgg	‘birth sack’
/rd/	ʃird	ʃird-əgg	‘farm’
/ɲ/	bəɲ	bəɲ-əgg	‘sorghum pulp’
/ɭ/	ilɭ	ilɭ-əgg	‘beeswax’
/ms/	nāms	nāms-āgg	‘food’
/rs/	bāgdàrs	bāgdàrs-āgg	‘lizard’

The suffix also attaches to two words with root-final approximant *ɔ̃*: *kūūɔ̃/kūūɔ̃-əgg* ‘shadow’ and *ēēɔ̃/ēēɔ̃-āgg* ‘water-carrying net’. All other nouns with root-final approximant take the suffixes *-gg*, *-EEgg*, or *-ĀAgg* (see next two sections) which attach to sonorants.

Although *-ɖ* is a singular suffix, some roots have *ɖ* as the final root segment. As shown in the nouns of (14) with root-final *ɖ*, the dental surfaces in the plural form.

(14) **Root-final *ɖ* surfacing in plural nouns**

N SG	N PL	
ɖə̀ɖ	ɖə̀ɖ-əgg	‘scorpion’
káēɖ	káēɖ-āgg	‘cup, spoon’
lāāɖ	lāāɖ-āgg	‘gum mastic’
lúliɖ	lúliɖ-əgg	‘snake type’
māāɖ	māāɖ-āgg	‘snake type’
rúɖ	rúɖ-əgg	‘dirt’
ēēɖ	īiɖ-əgg	‘his eye/his eyes’
yāāɖ	yāāɖ-āgg	‘broken plate’
mīɖ	mīɖ-əgg	‘stone’

However, in the eleven plural nouns of (15) with root-final *ɖ*, the segment *ɖ* is either weakened to the approximant *ɔ̃* or elided. Several of these nouns have more than one plural form. The noun of (a) has one plural form where *ɖ* surfaces and one where it is weakened to *ɔ̃*. The noun of (15d) has one plural form where *ɖ* surfaces and one where it is elided. The nouns of (15e-i) have one plural form where *ɖ* is weakened to *ɔ̃* and one where it is elided.

(15) **Root-final *ɖ* weakened to approximant *ɔ̃* or elided in plural nouns**

	N SG	N PL with <i>ɖ</i>	N PL with <i>ɔ̃</i>	N PL with elision	
(a)	ɖāðɖ	ɖāðɖ-əgg	ɖāðɔ̃-əgg		‘fertile soil’
(b)	fīɖ		fīɔ̃-əgg		‘feather’
(c)	lōggɔ́ɔ́ɖ		lōggɔ́ɔ́ɔ̃-əgg		‘locust’
(d)	abbāɖ	abbāɖ-əgg		abbā-əgg	‘tree type’
(e)	áfáɖ		áfáɔ̃-əgg	áfá-əgg	‘blood’
(f)	ɔ̃ɖ		ɔ̃ɔ̃-əgg	ɔ̃-əgg	‘wife’
(g)	ɲɖ		ɲɔ̃-əgg	ɲi-əgg	‘husband’
(h)	áfáɖ		áfáɔ̃-əgg	áfá-əgg	‘blood’
(i)	rēbbéɖ		rēbbéɔ̃-əgg	rēbbé-əgg	‘reed type’
(j)	lúɖ			lú-əgg	‘leg’
(k)	kólíɖ			kólí-əgg	‘bird type’

Similarly, there are several nouns with root-final palatal geminate *ɲ* in which the geminate surfaces in the plural form.

(16) **Root-final *ɲ* surfacing in plural nouns**

	N SG	N PL	
	síɲɲ	síɲɲ-əgg	‘tree type’
	ʔálɲèɲ	ʔálɲèɲ-əgg	‘tree type’
	sūrmùɲ	sūrmùɲ-əgg	‘tree type’
	pēbbēɲ	pēbbēɲ-əgg	‘tree type’

There are also nouns with root-final palatal geminate *ɲ* in which the geminate is elided in the plural form. The noun of (17a) has one plural form where *ɲ* surfaces and one where it is elided.

(17) **Root-final *ɲ* elided in plural nouns**

	N SG	N PL with <i>ɲ</i>	N PL with elision	
(a)	bìmiríɲ	bìmiríɲ-əgg	bìmirí-əgg	‘bird type’
(b)	búlíɲ		búlí-əgg	‘worm’
(c)	gàfāɲ		gàfē-əgg ²⁶	‘lung’

The suffix vowel of *-Agg* is assimilated to the preceding vowel when it directly follows the last root vowel. In addition to roundness and [ATR] spreading, the suffix vowel also takes on the [-back] feature of the root. For example, in (15g) *ɲɖ-ɲ-əgg* ‘husband’, (15i) *rēbbéɖ/rēbbé-əgg* ‘reed type’, and (17a) *bìmiríɲ/bìmirí-əgg* ‘bird type’, the vowel of the suffix *-Agg* becomes *i* or *ɛ* to match the last root vowel.

The nouns of (15) and (17) are analyzed as exceptions in that intervocalic *ɖ* and *ɲ*

²⁶ This noun is irregular in that it has the suffix *-Egg* and the root vowel assimilates to the suffix vowel rather than vice versa.

are not weakened in other morpheme boundaries of the language. In (4) of section 2.1.3, we saw that *ɖ* of the root verb /cūɖ/ ‘climb’ is not weakened in the intervocalic environment of the continuous form cūɖ-án. Similarly, the *ʃ* of the root verb /káʃ/ ‘bring’ surfaces as a palatal plosive when the deictic completive suffix -Cagg is attached (káʃ-ǰaggā).

Alternatively, one might analyze the nouns of (15) and (17) as having suffixes in the singular and plural forms and the roots ending in vowels, such as *ɖāɖ-ɖ*/ *ɖāɖ-ɖagg* ‘fertile soil’, *abbā-ɖ*/ *abbā-agg* ‘tree type’, *bimiri-ʃ*/ *bimiri-igg* ‘bird type’, etc. However, this analysis requires an additional singular suffix -ʃ and plural suffix -ɖagg, the latter being unusual in that there are no other -CVC suffixes on nouns. Further, when the vowel-initial past continuous suffix -An is attached to the vowel-final verb root /pa/ ‘guard’, the suffix becomes a second syllable, juxtaposed to the root (*pā-án*), in accordance with {M2} of 3.1. However, the plural suffix on the nouns in (15) and (17) does not become an additional syllable (*bimiri-igg*), and reflects a different underlying form. Thus, the alternative analysis is not taken and the nouns of (15) and (17) are analyzed as having only plural suffixes.

In (13), the suffix -Agg was shown to attach to the root-final plosives -bb-, -ɖ-, -d- and -ʃ-. It is posited that the velar plosive is included in the list of root-final segments to which the suffix attaches. The velar plosive elision rule of {P2} in 2.1.3 predicts that word-final velar plosives are elided. It also predicts that when a vowel-initial suffix is attached to a root-final velar plosive *g*, the plosive will be elided in the resulting intervocalic environment. This is the case for the incomplete and past continuous forms of (18) with suffix -An. The deictic completive form is given to make clear the root-final segment.

(18) **Incomplete and continuous verb forms which elide *g***

Root	3sN	3sN	3sN		
	INCP	CONT.P	D.COMP		
/bag/ L	bāā	bā-án	bàg-gāggā	[bàgāgā]	‘take’
/cig/ M	cīī	cī-án	cīg-góggō	[cīgógō]	‘wear’
/gug/ L	gūū	gū-án	gùg-gōggō	[gùgōgō]	‘vomit’

It is posited that the same process occurs in nouns with the plural suffix -Agg. The nouns of (19) are believed to have root-final velar plosives which are elided word-finally in the singular form and intervocalically in the plural form. After the velar plosive is elided, the vowel of the suffix takes on the same features as that of the last root vowel, just as in the nouns of (15) and (17) when *ɖ* and *ʃ* are weakened to elision.

There are no noun suffixes with initial consonant which attach to both underlying-final consonants and underlying-final vowels. Therefore, the root-final velar

(19) **Plural suffixes -*Ágg*, -*Āgg*, -*Agg* with root-final *g***

UR-final	N SG	N PL	
/ɛg/	áŋɛ́	áŋɛ́-ēgg	‘elephant’
/ag/	cáffá	cáffá-āgg	‘side of body’
/ɔg/	ɬálò	ɬálò-ògg	‘tax’
/ig/	būldí	būldí-igg	‘finger’
/əg/	tíŋɔ́	tíŋɔ́-ògg	‘sorghum type’
/ug/	kúlmú	kúlmú-úgg	‘buttock’

plosive *g* never surfaces in nouns as it does in verbs. Thus, there is no way to verify the root-final *g* in the nouns of (19).

Alternatively, the nouns of (19) could have root-final vowels. But as with the nouns of (15) and (17), the plural suffix on the nouns of (19) does not become an additional syllable, juxtaposed to the root (*áŋɛ́*-ēgg ‘elephant’) as does the past continuous suffix on verbs with root-final vowels (*pā*-ān ‘guard-CONT.P’) {M2}. Thus, the alternative analysis is not taken.

Plural suffix -*EEgg*

The plural suffix -*EEgg* attaches to root-final sonorants. About 17% of nouns have this suffix. There is no difference in phonological distribution between nouns with -*EEgg*, -*gg*, or -*Ágg* (next section), which are all suffixed to final sonorants.

(20) **Plural suffixes -*ĒĒgg*, -*ĒĒgg*, -*EEgg***

UR-final	N SG	N PL	
/m/	bààm	bààm-èègg	‘bird type’
/n/	kūn	kūn-īigg	‘hunger’
/ɲ/	lúɲ	lúɲ-íigg	‘boomerang’
/ŋ/	póóŋ	póóŋ-ēēgg	‘knife sheath’
/r/	ɬéèr	ɬéèr-èègg	‘carving tool’
/l/	ààl	ààl-ēēgg	‘brother’
/ð/	ǝǝð	ǝǝð-íigg	‘tree type’
/w/	ɖàà	ɖààw-èègg	‘monkey’
/y/	rāāē	rāāy-éēgg	‘quarrel, war’

The suffix -*EEgg* also attaches to one noun with root-final velar geminate *gg*: *ǝgg/ǝgg-éēgg* ‘place’. All other nouns with root-final velar geminate take the suffix -*AAɖ* (5.6.3) which attaches to obstruents and sonorants. The suffix -*EEgg* also attaches to three words with root-final dental plosive *ɖ* in which *ɖ* is weakened to the approximate *ð* or elided: *rēbbéɖ/ rēbbéð-ēēgg* ‘reed type’, *ŋāāŋāāɖ/ŋāāŋāā-éēgg* ‘thigh’, *ǝbbùùɖ/ǝbbùù-īigg*. In *ŋāāŋāā-éēgg* and *ǝbbùù-īigg*, three syllables remain despite the deleted plosive. All other nouns with root-final dental plosives take the suffix -*Agg*.

In (1) of 3.2.1, the suffix *-EEgg* was attached to nouns with each of the six root vowels.

Plural suffix *-AAgg*

The plural suffix *-AAgg* attaches to root-final sonorants. Only the nine nouns of (21) have been attested with this suffix. Since the suffix vowel is underlyingly specified as [-round], it is not affected by the [round] quality of the root such as in *kùùl/ kùùl-ṣṣegg* ‘clan member’ and *bón/ bôn-āagg* ‘heart’. Thus, the [round] rule {M4} does not apply to this suffix.

(21) Plural suffixes *-AAgg, -ĀAgg, -AAgg*

UR-final	N SG	N PL	
/l/	îl	îl-ṣṣegg	‘horn’
	téèl	téél-àagg	‘anchor’
	kùùl	kùùl-ṣṣegg	‘clan member’
	láál	láál-āagg	‘pumpkin type’
/n/	kásán	kásán-āagg	‘friend’
	bón	bón-āagg	‘heart’
/m/	yāàm	yààm-àagg	‘bride’
/w/	cééṣ	cééw-āagg	‘lame person’
/ð/	jàáð	jàáð-āagg	‘old clothes’

There is no difference in phonological distribution between nouns with suffixes *-gg*, *-EEgg*, or *-AAgg*, which are all suffixed to final sonorants; nor is there any way to predict which noun takes which of the three suffixes, as shown by the contrasts of (22).

(22) Contrast of plural segmental suffixes *-gg, -EEgg, -AAgg*

UR-final	N SG	N PL	
/εɛl/	ḍèèl	ḍèèl-g	‘storage shelf’
	ḍēèl	ḍèèl-èègg	‘sea, town’
	téèl	téél-àagg	‘anchor’
/aam/	kààm	kààm-g	‘nyala’
	fààm	fáám-èègg	‘opinion’
	yāàm	yààm-àagg	‘bride’

About 10% of nouns with root-final sonorants have more than one plural form, taking the suffixes *-EEgg* and *-gg* (see examples in section 6.2.6).

6.2.3 Plural suffixes on semantically defined sets of nouns

The remaining segmental plural suffixes are listed in table 11 and are attached to

less than 5% of nouns, most of which belong to certain semantically defined sets of nouns. In these sets, the semantic correlation of the nouns with the suffix is clear, although there are many exceptions. The suffixes *-AAɖ* and *-ɖ* are commonly attached to kinship terms, and the suffixes *-əgg*, *-V⁺g* and *-⁺g*, are commonly attached to body parts. The suffix *-AAɖ* is underlyingly specified as [-round], the suffixes *-V⁺g* and *-⁺g* are specified as [+ATR], and *V* is a person marker vowel.

Table 11: Plural Suffixes on semantic sets of nouns

Suffix	Semantic set	N SG	N PL		# of nouns
<i>-AAɖ</i>	kinship nouns	mãṣṣṑ	mãṣṣṑ-ṣṣṑ	‘grandfather’	5
	root-final <i>-gg</i>	gàágg	gàágg-āāɖ	‘bird type’	5
<i>-ɖ</i>	kinship nouns	ābéé	ābéé-ɖ	‘maternal uncle’	5
<i>-əgg</i>	body part	fānd	fānd-əgg	‘cheek’	5
<i>-⁺g</i>	body part	āāl	ṑṑl-g	‘my head/our heads’	8
<i>-V⁺g</i>	body part	ṣṣṑ	ùṑ-ūgg	‘your eye/our eyes’	2

The suffix *-AAɖ* is partly conditioned by phonology and partly correlated to semantics. As for phonological conditioning, *-AAɖ* attaches to nouns whose stem ends in *gg*. The plural suffix *-Agg* in (13) which attaches to root-final *bb*, *ɖ*, *d*, *ʃ* and *g*, cannot be used with such nouns. In addition, there are five nouns not ending in *gg* which take *-AAɖ*, four of which are kinship terms. There are many other kinship terms which do not have the suffix *-AAɖ*. Only the ten nouns of (23) have been attested with this suffix. Since the suffix vowel is underlyingly specified as [-round], it is not affected by the [round] quality of the root.

(23) **Plural suffixes *-ĀĀɖ*, *-ĀĀɖ*, *-AAɖ***

UR-final	N SG	N PL	
/gg/	gàágg	gàágg-āāɖ	‘bird type’
	kàmàlògg	kàmàlògg-ààɖ	‘mature woman’
	kṑggṑlìgg	kṑggṑlìgg-ṑṑɖ	‘cock’
	kúūrlúúgg	kúūrlúúgg-ṣṣṑ	‘rodent type’
	ṣṑṣṑgg	ṣṑṣṑgg-ṣṣṑ	‘greed’
/m/	máám	máám-ààɖ	‘paternal aunt’
/n/	bèèn	bèèn-āāɖ	‘gossip’
/ð/	mṣṣṑ	mṣṣṑ-ṣṣṑ	‘grandfather’
	yààṑ	yààṑ-āāɖ	‘sister’
/w/	bààṑ	bààw-āāɖ	‘father’

The segmental suffix *-ɖ* attaches to five nouns with root-final vowels, which are kinship terms or insects, two of which are compound nouns with the morpheme *maa* ‘mother’²⁷.

²⁷ Because of limited data collection, it was not determined if the word for ‘mother’ attaches

(24) **Plural suffix -ḑ, -ḑ̃**

UR-final	N SG	N PL	
/a/	tááðà	tááðà-ḑ	‘grandmother’
	bððŋmà	bððŋmà-ḑ	‘insect type’
/aa/	fùùlmàà	fùùlmàà-ḑ	‘insect type (compound noun)’
	wîilmāā	wîilmāā-ḑ	‘ant name (compound noun)’
/εε/	ābéé	ābéé-ḑ	‘maternal uncle’

Although most plural suffixes are underlyingly unspecified for [ATR], the suffix *-agg* is underlyingly [+ATR] and spreads its [ATR] quality to the noun root {M3}. Similar to its unspecified equivalent *-A_{gg}*, the suffix *-agg* attaches to root-final obstruents. Only the five nouns of (25) have been attested with this suffix, three of which are body parts.

(25) **Plural suffixes -agg, -āgg, -ǫgg**

Vowel of UR	N SG	N PL	
/ε/	tēēnd	tīīnd-āgg	‘riddle’
	wéé(s)	wís-āgg	‘house’
	bērd	birḑ-āgg	‘anus’
/a/	fānd	fōnd-ǫgg	‘cheek’
	sārānd	sārōnd-āgg	‘crotch line’

The segmental plural suffix *-⁺gg* is underlying [+ATR] and spreads its [ATR] quality to the noun root {M3}. Similar to its unspecified equivalent *-gg*, the suffix *-⁺gg* attaches to final sonorants and to final vowels. Only the nine nouns of (26) have been attested with this suffix, four of which are inherently possessed body part nouns. Inherently possessed body part nouns are a subset of inalienable nouns and are discussed in section 5.2.4.

(26) **Plural suffixes -⁺gg, -⁺gg̃**

Vowel of UR	UR-final	N SG	N PL	
/ɔ/	/l/	fɔl	fūl-g	‘hole’
/ɔ/	/l/	ḑɔl	ḑūl-g	‘penis’
/ɔ/	/ɔ/	gðà-ḑ ²⁸	gù- ⁺ gg	‘excrement’
/a/	/a/	kālāā-ḑ	kālāā- ⁺ gg	‘tongue’
	/l/	āāl	àəl-g	‘my head/our heads’
	/ɲ/	āāɲ	àəɲ-g	‘my back/our backs’
	/ŋ/	āāŋ	àəŋ-g	‘my body/our bodies’
	/l/	āāl-g	àəl-g	‘my stomach/our stomachs’

In nouns with [+ATR] root vowel quality and root-final sonorant, it cannot be

the suffix *-ḑ* other than in insect nouns.

²⁸ Irregular vowel change from *a* to *ɔ*.

determined whether the suffix is *-g* or *-⁺g*. In nouns such as *jĩnjĩl* / *jĩnjĩl-g* ‘bird type’, *lǎǎð* / *lǎǎð-g* ‘male singing voice’, and *lún* / *lún-g* ‘boomerang’, the [+ATR] quality could be underlyingly present in the suffix as well as in the root, or only present in the root. In the nouns of (26), [+ATR] quality spreads to the root of the plural noun {M3}, giving evidence of the underlyingly [+ATR] quality of the suffix.

There is also a suffix that is underlyingly specified as [+ATR], but unspecified for any other vowel features. There are seven inherently possessed body part nouns discussed in 5.2.4 for which the root is only a consonant. A possessive person marker long vowel *VV-* is prefixed to the root in singular forms. In the plural form, two of these nouns take the plural suffix *-V⁺gg*, where *V* is the person marker vowel, along with a short person marker prefix vowel *V-*. In (27), the possessive paradigms of these two body parts are shown. There are many body part nouns which do not take the suffixes *-əgg*, *-⁺g*, or *-V⁺gg*.

(27) **Plural suffix *-V⁺gg***

	N SG, SG person	N PL, SG person	N PL, PL person	
(a)	āā-ḍ 1sPs	ǎ-ḍ-ǎgg 1sPp	ǎ-ḍ-ǎgg 1pPp	‘eye’
	ǎǎ-ḍ 2sPs	ú-ḍ-úgg 2sPp	ù-ḍ-úgg 2pPp	
	ēē-ḍ 3sPs	í-ḍ-ígg 3sPp	ì-ḍ-ígg 3pPp	
(b)	áá-s 1sPs	ǎ-s-ǎgg 1sPp	ǎ-s-ǎgg 1pPp	‘hand’
	ǎǎ-s 2sPs	ú-s-úgg 2sPp	ù-s-úgg 2pPp	
	ēē-s 3sPs	í-s-ígg 3sPp	ì-s-ígg 3pPp	

6.2.4 Irregular plural formation

There are also a handful of nouns with various other plural formations, as shown in the exhaustive list of (28). In (a-b), the root-final vowel is elided; in (c), the last root vowel is assimilated to the vowel of the suffix; in (d), the underlying final consonant is not realized in the singular form; in (e), the plural form has the

(28) **Irregular plural formation**

	N SG	N PL	
(a)	cĩĩĩ	cĩĩĩ-ǎǎgg	‘diarrhea’
(b)	ǎŋǎ	ǎŋ-g	‘young girl’
(c)	gǎfǎĩĩ	gǎfē-ēgg	‘lung’
(d)	wéé	wís-ǎgg	‘house’
(e)	kǎr-ḍ	kǎr-ǎǎgg	‘bird type’
(f)	nǎā	nǎlg	‘girl’
(g)	jǎā	jǎālgé	‘son, boy, person’
(h)	gǎǎ-ḍ	gùù-gg	‘excrement’
(i)	jĩn	jǎgg	‘man, person’
(j)	jěēm	jěgg	‘thing, something’
(k)	cél	cǎālg	‘dancing group member’

Plural nouns (continued)

bìlḍḍḍgg	‘worms (disease)’	fēgg	‘water’
íyáḍḍgg	‘oil’	márḥsēēgg	‘disease type’
ḵūgg	‘urin’	ḍḥrsìgg	‘bad smell’
cḥḍgg	‘holy place’	kāḥēēgg	‘group’

6.2.6 Multiple forms

About 5% of nouns have two plural forms or two singular forms. Whereas the segmental suffixes differ between the multiple forms, the tone pattern remains the same as far as allowed by the tone rules described in section 6.3.2. This section gives all attested nouns with multiple forms as spoken by the main language resource person. Other speakers sometimes list multiple forms for other nouns, although the multiple suffixes which attach to nouns do not change as much from speaker to speaker.

The most common noun type taking multiple forms has the plural suffix *-gg* or *-EEgg*.

(31) Variation between plural suffixes *-gg* and *-EEgg*

	N SG	N PL 1	N PL 2	
(b)	bààm	bààm-g	bààm-èègg	‘bird type’
(d)	cēyám	cēyám-g	cēyám-ēēgg	‘aged tobacco’
(h)	fḥḍḥr	fḥḍḥr-g	fḥḍḥr-ēēgg	‘nose’
(i)	ḵíl	ḵíl-g	ḵíl-īgg	‘cricket’
(j)	kāāē	kāāē-gg	kāāy-ēēgg	‘witch doctor’
(k)	kābbàr	kābbàr-g	kābbàr-ēēgg ²⁹	‘wing, armpit’
(l)	kàḍḍēl	kàḍḍēl-g	kàḍḍēl-éégg	‘leader’
(p)	lēēḍ	lēēḍ-g ³⁰ [lēēg _o]	lēēḍ-éégg	‘drill for planting’
(q)	lúḵ	lúḵ-g	lúḵ-ígg	‘boomerang’
(r)	lúúḥ	lúúḥ-g	lúúḥ-ígg	‘water pot’
(s)	ḵāḥm	ḵāḥm-g	ḵāḥm-ígg	‘chin’
(t)	ḵéēḥ	ḵéēḥ-g	ḵéēḥ-èègg	‘spear type’
(u)	rāāē	rāāē-gg	rāāy-éégg	‘quarrel, war’
(v)	ḥéēr	ḥéēr-g	ḥéēr-èègg	‘carving tool’
(w)	màḵl	màḵl-g	màḵl-īgg	‘rainbow, spirit’
(x)	bāḥḍ	bāḥḍ-g [bāḥg _o]	bāḥḍ-īgg	‘salt’
(y)	lāḥr	lāḥr-g	lāḥr-èègg	‘cervix, womb’

²⁹ As discussed in 6.4, the tone pattern in plural body parts is prescribed by a plural possessive L(M) tone morpheme and therefore can differ from the underlying form.

³⁰ As discussed in 6.3.2, Mid tone on vowel-less suffixes is not assigned following root-final Low tone.

There are two nouns attested to take either the plural suffix *-gg* or *-A_{Agg}*.

(32) **Variation between plural suffixes *-gg* and *-A_{Agg}***

N SG	N PL	N PL	
láál	láál-g	láál-áāgg	‘pumpkin type’
cééṣ	cééṣ-g	cééw-āāgg	‘lame person’

There is one noun attested to take either the plural suffix *-gg* or *-Agg*.

(33) **Variation between plural suffixes *-gg* or *-Agg***

N SG	N PL	N PL	
ēēḏ	ēēḏ-g [ēēg _o ʔ]	ēēḏ-āgg	‘net’

There are two nouns attested to take either the plural suffix *-gg* or *-ḡ*.

(34) **Variation between plural suffixes *-gg* and *-ḡ***

N SG	N PL	N PL	
fùùlmàà	fùùlmàà-gg	fùùlmàà-ḡ	‘insect type’
bòòḡmà	bòòḡmà-gg	bòòḡmà-ḡ	‘insect type’

There is one noun attested to take the singular suffix *-ḡ* with plural suffix *-gg* or *-EEgg*.

(35) **Singular suffix *-ḡ* with variation between plural suffixes *-gg* and *-EEgg***

N SG	N PL 1	N PL 2	
gèùr-ḡ	gèùr-g	gèùr-īgg	‘stomach, pouch’

In some nouns, the status of the final *ḡ* is varying. Either it functions as part of the stem and is retained in the plural, or it functions as the singular marker and is not present in the plural. There are four nouns attested to take the plural suffix *-Agg* or have a singular and plural suffix. In (36), the *ḡ* of *nēnḡ* ‘demon’ can either be a root-final segment or a singular suffix; similarly for the other forms of (36).

(36) **Plural suffix *-Agg* or Singular suffixes *-ḡ* with Plural suffixes *-gg***

N SG	N PL 1	N SG	N PL 2	
nēnḡ	nēnḡ-āgg	nēn-ḡ	nēn-g	‘demon’
kāpnāḡ	kāpnāḡ-āgg	kāpnā-ḡ	kāpnā-gg	‘bowl’
bèrḡ	bèrḡ-āgg	bèr-ḡ	bèr-āgg	‘lion’
kōrḡ	kōrḡ-āgg	kōr-ḡ	kōr-āgg	‘bird type’

There are two nouns attested to take the plural suffix *-EEgg* or have a singular and plural suffix.

(37) **Plural suffix *-EEgg* or Singular suffix *-ɖ* with Plural suffix *-gg***

N SG	N PL 1	N SG	N PL 2	
lɔggɔɔɖ	lɔggɔɔɖ-ēēgg	lɔggɔɔ-ɖ	lɔggɔɔ-gg	‘locust’
abbùùɖ	abbùùɖ-ììgg	abbùù-ɖ	abbùù-gg	‘butterfly’

Finally, there are four nouns attested to have two singular forms. The first three nouns of (38) take the same plural form for both singular forms. However, the fourth noun also has two plural forms corresponding to the two singular forms.

(38) **Two Singular forms**

N SG 1	N SG 2	N PL 1	N PL 2	
àðr	àðr-g	àðr-ēēg		‘priest, chief’
ʃíŋ-ɖ	ʃíŋ-íɖ	ʃíŋ-g		‘louse’
gàfā-ɥ	gɔfɔ	gàfē-ēgg		‘lung’
búlí-ɥ	búlí-ɖ	búlí-ìgg	búlí-gg	‘worm’

6.3 Tone in noun plural formation

Thus far we have merely described the segments of noun plural formation. Now we turn to a description of tone in noun plural formation. In 6.3.1, we list the underlying tonal allomorphs of noun suffixes; in 6.3.2, we discuss tone assignment in plural formation; and in 6.3.3, a few plural nouns with irregular tone assignment are presented.

6.3.1 Tonal allomorphs of suffixes

Five out of six singular suffixes have no underlying tone and therefore have no effect on the singular noun tone. However, the suffix *-Aɖ* may have no underlying tone as in *kól-ɔɖ/ kól-g* ‘egg’ or Mid tone as in *níl-ɔɖ/níl-g* ‘intestine’. Singular suffixes with vowels having no underlying tone (*-Aɖ*, *-AAɖ*, *-Eɖ*) are assigned the root-final tone {M5}.

(39) **Singular suffixes *-Aɖ*, *-AAɖ* and *-Eɖ* attached to root-final sonorants**

Suffixes	N SG	N PL	
-ɖ	wéráá-ɖ	wéráá-gg	‘tribe member’
-g	àðr-g	àðr-ēēgg	‘priest, chief’
-ɥ	pēbbēē-ɥ	pēbbēē-gg	‘tree type’
-Āɖ	níl-ɔɖ	níl-g	‘intestine’
-Aɖ	kól-ɔɖ	kól-g	‘egg’
-AAɖ	cāl-āāɖ	cāl-g	‘testicle’
-Eɖ	ʃíŋ-íɖ	ʃíŋ-g	‘louse’

Segmental plural suffixes have up to three tonal allomorphs. Suffixes without

vowels have a form with no underlying tone as well as a form with underlying Mid tone. Suffixes with short vowels have a form with no underlying tone, a form with Mid tone, and a form with High tone. Suffixes with long vowels have a form with no underlying tone, a form with Mid tone, and a form with High-Mid tone. There is only one form of the suffix $-V^+g$, which has underlying Mid tone, and only one form of the suffix $-OOgg$, which has no underlying tone. The tonal allomorphs of plural suffixes are listed in table 12 and examples follow.

Table 12: Tonal allomorphs of noun plural suffixes

No underlying tone	Mid tone	High or High-Mid tone
-gg	- gg	-Ágg
-Agg	-Āgg	-ÉĒgg
-EEgg	-ĒĒgg	-ĒĒgg
-AAgg	-ĀĀgg	-ÁĀgg
-AAḁ	-ĀĀḁ	-ÁĀḁ
-ḁ	- ḁ	
-əgg	-əgg	-əgg
- ⁺ g	- ⁺ g	
-OOgg	-V ⁺ g	

In (40), examples of nouns with each of the tonal allomorphs are given. The plural suffix $-gg$ can have no underlying tone as in (a,c), where the plural form surfaces with final High tone, the same as in the singular form. Or the plural suffix $-gg$ can have underlying Mid tone as in (b,d) which causes the plural form to have final High-Mid tone. Similarly, other nouns of (40) show contrastive underlying tone in the other segmental suffixes.

(40) **Tonal allomorphs of noun plural suffixes with examples**

Suffix	Tone	N SG	N PL	
(a)	-gg	léél	léél-g	‘grass’
(b)	- gg	káál	káál-g	‘house fence’
(c)	-gg	mṣṣ	mṣṣ-gg	‘locust’
(d)	- gg	fṣṣá	fṣṣá-gg	‘seed’
(e)	-Agg	lənḁ	lənḁ-əgg	‘tree type’
(f)	-Āgg	bànḁ	bànḁ-āgg	‘tree type’
(g)	-Ágg	mīḁ	mīḁ-ágg	‘stone’
(h)	-EEgg	ḁààr	ḁààr-èègg	‘eagle’
(i)	-ĒĒgg	cèèr	cèèr-ēēgg	‘singer’
(j)	-ÉĒgg	rāāē	rāāy-éēgg	‘quarrel, war’
(k)	-AAgg	téél	téél-ààgg	‘anchor’
(l)	-ĀĀgg	ǰááḁ	ǰááḁ-āāgg	‘old clothes’
(m)	-ĀĀgg	láál	láál-āāgg	‘pumpkin type’

	Suffix Tone	N SG	N PL	
(n)	- <u>AA</u> d	máám	máám-ààd	‘paternal aunt’
(o)	- <u>AA</u> d	yààð	yààð-āāđ	‘sister’
(p)	- <u>ĀĀ</u> d	měěð	měěð-ěěđ	‘grandfather’
(q)	- <u>đ</u>	ṭááðà	ṭááðà-đ	‘grandmother’
(r)	- <u>đ</u>	ābēé	ābēé-đ	‘maternal uncle’
(s)	-əgg	tēēnd	tīīnd-əgg	‘riddle’
(t)	-əgg	wéé(s)	wís-əgg	‘house’
(u)	-əgg	fānd	fīnd-əgg	‘cheek’
(v)	- ⁺ g	āāl	əəl-g	‘my head/our heads’
(w)	- ⁺ g	fól	fūl-g	‘hole’
(x)	-V ⁺ g	ṣṣđ	ùđ-ūgg	‘your eye/your eyes’
(y)	-OOgg	kōr-đ	kōr-ṣṣgg	‘bird type’

In (40k, n), the root underlying HL tone is spread across two syllables in the plural form as a result of the absence of underlying tone in the plural suffix {M6}. In (v), the change in tone from singular to plural form is a result of the inherently possessed body part morpheme rather than from underlying tone of the suffix, as discussed in 6.4.

6.3.2 Tone assignment in noun plural formation

In the tone assignment of noun plural formation, root tone is used as the starting point; the tone assignment of suffixes is in addition to or after tone assignment of the root. Nouns with vowel suffixes are first discussed, followed by nouns with vowel-less suffixes.

Noun suffixes having vowels with no underlying tone

When a suffix with a vowel does not have underlying tone, tone spreads rightward from the final tone of the root to the suffix, in accordance with {M5} in 3.4.1. The nouns of (41) can be analyzed as having no underlying tone in the suffixes. As discussed shortly, in nouns with L, HL and ML melodies such as *jèèrs/jèèrs-əgg* ‘hippopotamus’, *jíləbb/jíləbb-əgg* ‘water spring’, and *bāgdārs/bāgdārs-əgg* ‘lizard’, the suffix could also have Mid tone which assimilates to the root-final Low tone {M9}.

If the root tone were not the starting point for tone assignment in noun plural formation, right-to-left tone assignment of the plural noun in (41m) would render the surface tone as **jíləbb-əgg* instead of *jíləbb-əgg*. The tone of the plural nouns of (n-q) would also be different.

(41) **Rightward tone spreading to unassigned suffix vowel**

	Root tone	Suffix	N SG	N PL	
(a)	H	-Agg	kás	kás-ág	‘sorghum type’
(b)		-gg/-EEgg	ún-g	ún-ígg	‘tear’
(c)	M	-Agg	māāḍ	māāḍ-āgg	‘snake type’
(d)		-EEgg	kōr	kōr-ēegg	‘word, speech’
(e)		-ḍ/-EEgg	bāār-ḍ	bāār-ēegg	‘abdomen, waist’
(f)		-aaḍ/-gg	cāl-āāḍ	cāl-g	‘testicle’
(g)		-egg	tēēnd	tīind-egg	‘riddle’
(h)		-ḍ/-OOgg	kōr-ḍ	kōr-ōgg	‘bird type’
(i)	L	-Agg	jèērs	jèērs-agg	‘hippopotamus’
(j)		-EEgg	bāām	bāām-ēegg	‘bird type’
(k)		-ḍ/-AAgg	bār-ḍ	bār-àegg	‘lion’
(l)		-AAḍ	kāmàlōgg	kāmàlōgg-àāḍ	‘mature woman’
(m)	HL	-Agg	jílabb	jílabb-egg	‘water spring’
(n)	HM	-Agg	búlūurs	búlūurs-egg	‘bird type’
(o)	ML	-Agg	bāgdārs	bāgdārs-agg	‘lizard’
(p)	LM	-Agg	ābbāḍ	ābbāḍ-agg	‘tree type’
(q)	MHL	-AAḍ	kāggáligg	kāggáligg-àḍ	‘cock’

However, there are a few nouns where the tone of the root is changed in the plural form. When a suffix with a vowel does not have underlying tone, and when there are two tones assigned to the root-final syllable, the second tone of the root-final syllable is delinked and reassigned to the suffix vowel, in accordance with {M6} in 3.4.1.

The nouns of (42) each have two tones assigned to the root-final syllable, and each

(42) **Second of two root-final tones reassigned to suffix vowel with no underlying tone**

	Root tone	Suffix	N SG	N PL	
	HL	-Agg	ílḥ	ílḥ-agg	‘beeswax’
		-EEgg	fāām	fāām-ēegg	‘opinion’
		-AAgg	téél	téél-àagg	‘anchor’
		-AAḍ	māām	māām-àāḍ	‘paternal aunt’
	HM	-Agg	síḥḥ	síḥḥ-egg	‘tree type’
		-AAgg	cééṣ	cééw-āagg	‘lame person’
	ML	-Agg	kāpnāāḍ	kāpnāāḍ-agg	‘bowel for hot foot’
		-EEgg	gōmūūr	gōmūūr-iigg	‘dove’
		-EEgg	lōōr	lōōr-ēegg	‘cervix’
	LM	-Agg	gōn	gōn-egg	‘responsibility’
		-ḍ/-EEgg	gōūr-ḍ	gōūr-iigg	‘stomach pouch’
	LHL	-EEgg	bāsáār	bāsáār-ēegg	‘lie’
		-EEgg	jōfōōr	jōfōōr-ēegg	‘desire’

can be analyzed as having no underlying tone in the suffix(es). The second tone of the root-final syllable is delinked and reassigned to the suffix vowel.

The nouns *dā̀d̥/dā̀d̥-àgg* ‘fertile soil’ and *ṭá̀r/ṭá̀r-è̀egg* ‘lizard’ contrast with the nouns of (42) in that the root-final tone is not delinked and thus {M6} does not apply. The nouns *káēḍ/káēḍ-àgg*, *káēḍ-àgg* ‘cup, spoon’ and *gēmū̀r/gēmū̀r-ìgg*, *gēmū̀r-ìgg* ‘dove’ have two plural forms with differing tone. The plural form *káēḍ-àgg* is analyzed as having Mid tone in the suffix which makes it unnecessary for the root-final Mid tone to delink and reattach. Similarly, the plural forms *dā̀d̥-àgg*, *ṭá̀r-è̀egg*, and *gēmū̀r-ìgg* are analyzed as having Mid tone in the suffix which makes it unnecessary for the root-final Low tone to delink and reattach. As discussed below, the suffix Mid tone is analyzed to assimilate to root-final Low tone, in accordance with the tone lowering rule {M9} of 3.4.3.

Noun suffixes having vowels with Mid tone

In (43), noun suffixes with vowels having Mid tone are attached to nouns with various root tone melodies. Mid tone surfacing on suffixes attached to nouns with root-final Mid tone as in *māāḍ/māāḍ-àgg* ‘snake type’ is ambiguous since the suffix could have underlying Mid tone or no underlying tone. In nouns with only Low tone assigned to the root-final syllable as in *jè̀ers/jè̀ers-àgg* ‘hippopotamus’, *jílàbb/jílàbb-àgg* ‘water spring’, and *bāgdà̀rs/bāgdà̀rs-àgg* ‘lizard’, the suffix could have no underlying tone or Mid tone which assimilates to the root-final Low tone, in accordance with the tone lowering rule {M9}.

(43) Mid tone on suffix vowel of various suffixes

Root tone	Suffix	N SG	N PL	
H	-Āgg	órónd̥	órónd̥-ōgg	‘fermented milk’
	-ĒĒgg	póóŋ	póóŋ-ēēgg	‘knife sheath’
	-ĀĀgg	jááð	jááð-āāgg	‘old clothes’
	-ōgg	wéé(s)	wís-ōgg	‘house’
	-Āḍ/-gg	jíl-ḍ̥	jíl-g	‘intestine’
M	-Āgg	māāḍ	māāḍ-àgg	‘snake type’
	-ĒĒgg	kūn	kūn-īgg	‘hunger’
	-ĀĀḍ	ḍḍōgg	ḍḍōgg-ḍḍ̥	‘greed’
	-ōgg	tēēnd̥	tīind̥-ōgg	‘riddle’
	-ĀĀḍ/-gg	cāl-āāḍ	cāl-g	‘testicle’
L	-Agg	jè̀ers	jè̀ers-àgg	‘hippopotamus’
	-EEgg	bààm	bààm-è̀egg	‘bird type’
	-ḍ/-ĀAgg	bè̀r-ḍ̥	bè̀r-ḍ̀gg	‘lion’
	-ĀĀḍ	kàmàlògg	kàmàlògg-ààḍ	‘mature woman’
HM	-Agg	káēḍ	káēḍ-àgg	‘cup, spoon’
HL	-ĒĒgg	ṭá̀r	ṭá̀r-è̀egg	‘lizard’
	-Agg	jílàbb	jílàbb-àgg	‘water spring’

Root tone	Suffix	N SG	N PL	
MH	- <u>Ā</u> gg	dɔd	dɔd-ōgg	‘bird type’
ML	-Agg	ḍāḍḍ	ḍāḍḍ-āgg	‘fertile soil’
	-Agg	bāḡḡārs	bāḡḡārs-āgg	‘lizard’
	-EEgg	gōmūūr	gōmūūr-ìgg	‘dove’
LH	- <u>Ā</u> gg	bìmiríj	bìmiríj-ōgg	‘bird type’
	- <u>Ā</u> ḍ	gāāgg	gāāgg-āāḍ	‘bird type’
HMH	- <u>Ā</u> gg	lúliiḍ	lúliiḍ-ōgg	‘snake type’
	- <u>Ā</u> ḍ	kúūrlúúgg	kúūrlúúgg-ōōḍ	‘rodent type’
HLH	-ḍ/-gg	rúnjùú-ḍ	rúnjùú-gg	‘bird type’

However, in nouns with two tones on the root-final syllable such as *ṭáḍr/ṭáḍr-èègg* ‘lizard’, *káēḍ/káēḍ-āgg* ‘cup, spoon’, *ḍāḍḍ/ḍāḍḍ-āgg* ‘fertile soil’, the suffix must have underlying tone. If it had no underlying tone, the second of the two root-final tones would delink and reassign to the suffix {M6} as in the nouns *ilj/ilj-ōgg* ‘bees-wax’ *sííj/sííj-ōgg* ‘tree type’, and *kāpāāḍ/kāpāāḍ-āgg* ‘bowel’ of (42). There are no plural nouns surfacing with Mid suffix tone following either ML or HL tone on the root-final syllable. Therefore, the nouns *ṭáḍr/ṭáḍr-èègg* ‘lizard’ and *ḍāḍḍ/ḍāḍḍ-āgg* ‘fertile soil’ are analyzed to have Mid tone in the suffix which assimilates to preceding Low tone {M9}.

Mid tone does surface when attached to nouns with Low root tone melodies such as *bəṇj/bəṇj-ōgg* ‘pulp’. However, as discussed below, this suffix tone is analyzed as underlying High tone which lowers to Mid following root-final Low tone, also in accordance with rule {M9}.

Noun suffixes having vowels with High or High-Mid tone

High tone in noun suffixes is less frequent than Mid tone and follows fewer root

(44) High and High-Mid tone on suffix vowel of various suffixes

Root tone	Suffix	N SG	N PL	
H	- <u>Ā</u> gg	kós	kós-ōgg	‘sorghum type’
	- <u>Ē</u> gg	lúp	lúp-ígg	‘boomerang’
	- <u>Ā</u> gg	láál	láál-āāgg	‘pumpkin type’
M	- <u>Ā</u> gg	fānḍ	fānḍ-ōgg	‘cheek’
	- <u>Ē</u> gg	múfúr	múfúr-ígg	‘gazelle type’
	- <u>Ā</u> ḍ	māōō	māōō-ōōḍ	‘grandfather’
L	- <u>Ā</u> gg	bəṇj	bəṇj-ōgg	‘pulp’
	-ḍ/- <u>Ē</u> gg	mōggḍr-ḍ	mōggḍr-ēēgg	‘stirring stick’
	- <u>Ā</u> gg	kùùl	kùùl-ōōgg	‘clan member’
	- <u>Ā</u> ḍ	bēēn	bēēn-āāḍ	‘gossip’
LM	- <u>Ā</u> gg	ḍiwīnḍ	ḍiwīnḍ-ōgg	‘grass type (comp)’

tone melodies than Mid tone. In (44), noun suffixes with vowels having High or High-Mid tone are attached to nouns with four different root tone melodies.

In accordance with the suffix tone lowering rule {M9}, suffix-initial High tone becomes Mid when attached to a root such as *bàŋɲ/bàŋɲ-àgg* ‘pulp’ with Low tone, or in the other nouns in (44) with Low tone melody.

The root tone melodies HL and ML are missing from the examples of (43-44). For unknown reasons, nouns with these root-tone melodies do not attach suffixes with initial High tone which would surface as Mid tone {M9}. The only noun with a High tone suffix which attaches to a noun with more than one tone in the root tone melody is *ḍiwīṇḍ/ḍiwīṇḍ-àgg* ‘grass type (lit. rat’s ear)’ which is a compound noun.

Example (45) shows the resulting combinations of suffix tone and root-final tone for nouns attaching suffixes with vowels. The noun *kás/kás-àgg* ‘sorghum type’ of (a) and (c) could have High tone or no underlying tone in the suffix; either analysis results in the same surface tone. The noun *māāḍ/māāḍ-àgg* ‘snake type’ of (e) and (f) could have Mid tone or no underlying tone in the suffix. The noun *jèèrs/jèèrs-àgg* ‘hippopotamus’ of (h) and (i) could have Mid tone or no underlying tone in the suffix, as suffix Mid tone assimilates to preceding Low tone {M9}.

(45) **Resulting combinations of vowel suffix tone and root-final tone**

	Root tone	Suffix tone	N SG	N PL	
(a)	H	H	kás	kás-àgg	‘sorghum type’
(b)		M	órónḍ	órónḍ-àgg	‘fermented milk’
(c)		none	kás	kás-àgg	‘sorghum type’
(d)	M	H	mīīḍ	mīīḍ-àgg	‘stone’
(e)		M	māāḍ	māāḍ-àgg	‘snake type’
(f)		none	māāḍ	māāḍ-àgg	‘snake type’
(g)	L	H	bàŋɲ	bàŋɲ-àgg	‘pulp’
(h)		M	jèèrs	jèèrs-àgg	‘hippopotamus’
(i)		none	jèèrs	jèèrs-àgg	‘hippopotamus’

Vowel-less noun suffixes having no underlying tone

The nouns of (46) can be analyzed as having no underlying tone in the suffixes, as the tone of the root is the same in singular and plural forms.

(46) **No underlying tone on suffixes without vowels**

Root tone	Suffix	N SG	N PL	
H	-gg	áám	áám-g	‘bone’
	-gg	ṭééfá	ṭééfá-gg	‘leaf, illness type’
	-gg	sáá	sáá-gg	‘wine’

Root tone	Suffix	N SG	N PL	
M	-gg	bāāl	bāāl-g	‘cave’
	-gg	wāā	wāā-gg	‘shade, help’
	-ɬ/-gg	pēbbēē-ɬ	pēbbēē-gg	‘tree type’
L	-gg	wèlèɲ	wèlèɲ-g	‘sour/bitter taste’
	-gg	bùù	bùù-gg	‘chicken coop roof’
	-ɖ	bòòɲmà	bòòɲmà-ɖ	‘insect type’
HL	-gg	séèn	séèn-g	‘ruler’
	-gg	óɖàà	óɖàà-gg	‘army leader’
	-ɖ	ṭááðà	ṭááðà-ɖ	‘grandmother’
HM	-gg	jórgāāl	jórgāāl-g	‘bird type’
	-gg	páɬɬōō	páɬɬōō-gg	‘star’
	-ɖ/-gg	bóré-ɖ	bóré-gg	‘eye matter’
ML	-gg	bāāl	bāāl-g	‘instrument type’
	-gg	būù	būù-gg	‘tree type’
	-ɖ/-gg	bāsà-ɖ	bāsà-gg	‘large intestine’
LM	-gg	gòēn	gòēn-g	‘metal worker’
	-gg	gùlɖū	gùlɖū-gg	‘tree trunk, wood’
MH	-gg	bāár	bāár-g	‘tribe member’
	-gg	lēōḍá	lēōḍá-gg	‘animal’
	-ɬ/-gg	māāy-ɬ [māāɬ]	māāē-g	‘cucumber’
HLM	-gg	ààrēē	ààrēē-gg	‘grass type’
	-ɖ	wīlmāā	wīlmāā-ɖ	‘ant name (comp)’
MHM	-gg	cēggélūū	cēggélūū-gg	‘root type’
MHL	-gg	ūɲúròò	ūɲúròò-gg	‘pumpkin’
LHL	-gg	ḍùùl	ḍùùl-g	‘instrument type’
	-gg	gàḍáàè	gàḍáàè-gg	‘basket’

Vowel-less noun suffixes having Mid tone

In (47), noun suffixes having Mid tone are attached to nouns with four different root tone melodies, all of which end in High tone. Since the suffix has no vowel, the Mid tone of the suffix is assigned to the root-final syllable.

(47) Mid tone on suffixes without vowels

Root tone	Suffix	N SG	N PL	
H	-gg	ḍáár	ḍáār-g	‘throne’
	-gg	kúúfú	kúúfū-gg	‘ground sesame’
	-gg	wááyáá	wááyáā-gg	‘bird type’
	- ⁺ gg	fól	fūl-g	‘hole’
	-ɖ/-gg	wéráá-ɖ	wéráā-gg	‘tribe member’

Root tone	Suffix	N SG	N PL	
MH	-gg	sāmán	sāmán-g	‘sorghum storehouse’
	-gg	fōyḍá	fōyḍá-gg	‘planting seed’
	-ḍ	ābéé	ābéé-ḍ	‘maternal uncle’
	-ḍ/-gg	mōréé-ḍ	mōréé-gg	‘vegetable type’
LH	-gg	àggáár	àggáár-g	‘rider, hunter’
HLH	-ḍ/-gg	rúnùú-ḍ	rúnùú-gg	‘bird type’

Mid tone in vowel-less suffixes does not surface following root-final Low tone, and Mid tone is ambiguous with no underlying tone in suffixes when following root-final Mid tone. However, Mid tone in vowel-less suffixes does surface following root-final High tone.

High tone in vowel-less suffixes does not surface following root-final Mid or Low tone, and High tone is ambiguous with no underlying tone in suffixes when following root-final High tone. Based on these limitations, there is no reason to posit underlying High tone on vowel-less suffixes.

Example (48) shows the resulting combinations of suffix tone and root-final tone for nouns attaching vowel-less suffixes. The noun *bāāl/ bāāl-g* ‘cave’ of (c-d) could have Mid tone or no underlying tone in the suffix. The noun *wèlèṇ/ wèlèṇ-g* ‘sour taste’ of (e-f) could have Mid tone or no underlying tone in the suffix, as suffix Mid tone assimilates to preceding Low tone or is not assigned {M9}.

(48) **Resulting combinations of suffix tone and root-final tone for vowel-less suffixes**

	Root tone	Suffix tone	N SG	N PL	
(a)	H	M	ḍáár	ḍáār-g	‘throne’
(b)		none	ám	ám-g	‘bone’
(c)	M	M	bāāl	bāāl-g	‘cave’
(d)		none	bāāl	bāāl-g	‘cave’
(e)	L	M	wèlèṇ	wèlèṇ-g	‘sour/bitter taste’
(f)		none	wèlèṇ	wèlèṇ-g	‘sour/bitter taste’

6.3.3 Nouns with irregular tone assignment

Outside regular tone assignment which is about 95% of nouns, there is a set of nouns changing to Low tone in the plural form, as well as a scattering of other nouns with unpredictable tone.

The nouns of (49) have Mid-Low root tone and vowel suffixes. In the plural form these nouns surface with Low tone in both the root and suffix syllables.

(49) **Nouns with ML root tone becoming L**

Suffix	Noun SG	Noun PL	
-EEgg	ḍāḍ	ḍāw-èègg	‘monkey’
	ḍēḍl	ḍēḍl-èègg	‘lake’
	ḍḍḍr	ḍḍḍr-ììgg	‘snake type’
	gāāl	gāāl-èègg	‘falcon’
	gāār	gāār-èègg	‘hog’
	māār	māār-èègg	‘unmarried woman’
	māāw	māāw-èègg	‘gazelle’
	məl	məl-ììgg	‘bamboo drinking straw’
	nāṇ	nāṇ-èègg	‘crocodile’
	mḍsḍr	mḍsḍr-èègg	‘horse’
-Agg	āṇār	āṇār-èègg	‘rope bed’
	sīnd	sīnd-ḍgg	‘guest’
-AAgg	kāāṇḍ	kāāṇḍ-ḍgg	‘water-carrying stick’
	yāām	yāām-ààgg	‘bride’

In previous sections, we have seen several nouns with ML root tone melody that contrast with the nouns of (49). The noun *bāḡḍārs/bāḡḍārs-ḍgg* ‘lizard’ of (41) and the nouns *lḍḍr/lḍḍr-èèg* ‘cervix’ and *kāṇāḍḍ/kāṇāḍḍ-ḍgg* ‘bowel’ of (42) have no underlying tone in the suffix, so root-final Low tone is delinked from the root and/or is assigned to the suffix {M5-6}. The nouns *ḡmūḍr/ḡmūḍr-ììgg* ‘dove’ and *ḍāḍḍḍ/ḍāḍḍḍ-ḍgg* ‘fertile soil’ have Mid underlying tone in the suffix which assimilates to the preceding Low tone {M9}, so the root-final tone is not delinked from the root nor assigned to the suffix. The nouns of (49) are similar to the ML nouns of (42) in that they also have suffixes with Mid tone assimilating to preceding Low tone {M9}. However, it is not understood why the root-initial Mid tone of the nouns of (49) also assimilates to Low tone, and this alternation could be analyzed as tone replacement.

In 6.4 it will be shown that possessed body part nouns also have a tone change in the plural form. However, this is a different tone change—LM replacement—than with the nouns of (49)—Low replacement.

There are a handful of other nouns with unpredictable tone in the plural form. In (50a-d), the root-final High tone is not assigned in the plural form. In (e), the suffix tone is Low. In (f-h), other tone changes take place between singular and plural forms.

(50) **Nouns with irregular tone in the plural form**

	N SG	N PL	
(a)	ūfú	ūfū-gg	‘tree type’
(b)	cēlḍá	cēlḍā-gg	‘charcoal’
(c)	kāsá	kāsā-gg	‘boy’

	N SG	N PL	
(d)	ṭāēḍá(g)	ṭāēḍā-āgg	‘wine strainer’
(e)	lúḍ	lú-ùgg	‘leg’
(f)	búlí-ḥ	búli-igg	‘worm’
(g)	jìḍ	jìḍ-àgg, jìgg	‘husband’
(h)	gāēḍg [gāēg,']	gāēḍ-āgg	‘thief’

6.4 Body part nouns

Since all body part nouns possessed by plural persons take an alternate tone pattern, a separate section is included for their description. All body part nouns possessed by plural persons have L(M) tone. Although the common tone pattern of *bṣṣrà/bṣṣrà-gg* ‘shoulder’ in the paradigm of (51) is Mid, Low, the plural forms possessed by plural persons surface as Low, Mid.

(51) Possessive paradigm for inalienable body part *bṣṣrà / bṣṣrà-gg* ‘shoulder’

	Singular person pronouns			Plural person pronouns		
Noun SG	ā	bṣṣràà	1sPs	---		1pPs
	ō	bṣṣràà	2sPs	---		2pPs
	ē	bṣṣràà	3sPs	---		3pPs
Noun PL	ā	bṣṣràà-gg	1sPp	āgg	bḍḍràā-gg	1pPp
	ō	bṣṣràà-gg	2sPp	ūgg	bḍḍràā-gg	2pPp
	ē	bṣṣràà-gg	3sPp	ēgg	bḍḍràā-gg	3pPp

The tone assignment of the plural person possessive morpheme is described in (52).

(52) Plural person possessive L(M) tone assignment

Plural possessed body part nouns have LM pattern in that Mid tone surfaces on the final syllable and Low tone surfaces on the others. However, monosyllabic body part nouns have Low tone.

This rule causes three-syllable body part nouns to be Low, Low, Mid; two-syllable body parts to be Low, Mid; and monosyllabic body parts to be Low. The nouns in (53) are exemplary of possession of body parts. Regardless of the root tone of nouns possessed by singular persons, the tone of plural body parts possessed by plural persons is governed by the possessive morpheme. Only the first person has been included since the other persons follow the pattern of (51) for their respective vowel pairs.

(53) Low-Mid tone alternation in plural person possession of body part nouns

Root tone	N SG, SG person	N PL, SG person	N PL, PL person	
H	ā cíl	ā	āgg cìl-g	‘spine’
	ā sísín	ā sísín-ēēgg	āgg sísín-ēēgg	‘gum’
	ā cáffá(g)	ā cáffá-āgg	āgg cáffá-āgg	‘side’

Root tone	N SG, SG person	N PL, SG person	N PL, PL person	
M	ā fīi-ɖ	ā fīi-gg	āgg fīi-gg	‘feather’
	ā kālāā-ɖ		āgg kəlāā-gg	‘tongue’
	ā pēbbār	ā pēbbār-g	āgg pēbbār-ēegg	‘rib’
L	ā ɖəl		āgg ɖul-g	‘penis’
	ā fɔɖɔr		āgg fɔɖɔr-ēegg	‘nose’
	ā bààlèè màà	ā bààlèè màà-gg	āgg bààlèè màà-gg	‘knee cap’
HL	ā il	ā il-àəgg	āgg il-àəgg	‘horn’
	ā lááðà(g)		āgg lààðā-gg	‘brain’
	ā tɔ̀ndúli(g)	ā tɔ̀ndúli-igg	āgg tɔ̀ndúli-igg	‘elbow’
HM	ā ɲíi-ɖ	ā ɲíi-gg	āgg ɲíi-gg	‘tooth’
ML	ā sùù-ɖ		āgg sùù-gg	‘hair’
	ā bàssà-ɖ	ā bàssà-gg	āgg bàssà-gg	‘intestine’
MH	ā búlɖí(g)	ā búlɖí-igg	āgg búlɖí-igg	‘finger’
	ā kūsūmí	ā kūsūmí-gg	āgg kūsūmí-gg	‘knee’
LM	ā àəmā		āgg àəmā-gg	‘liver’
	ā càɲàldā	ā càɲàldā-gg	āgg càɲàldā-gg	‘triceps’
HLM	ā kəlɔ		āgg kəlɔ-gg	‘jaw’
	ā ɖóggòlɔ	ā ɖóggòlɔ-gg	āgg ɖóggòlɔ-gg	‘ankle’

6.5 Genitive

Genitive nouns are used as agents or experiencers following a verb or as the possessor in a phrase with the general preposition *é*. A tone change marks the genitive case. In (54), the noun *àggáár* ‘hunter’ with LH root tone melody has ML tone melody when used as an experiencer following the verb *ɲáɔ-s=é* ‘need-COMP=PAS.A’. In (55), the noun *ɬɔɔ=n* ‘cow=DEF’ with H root tone melody has ML tone melody when used as the possessor in the phrase with general preposition.

- (54) *nāms* *ɲáɔ-s=é* **àggāār**
 food /ɲaw/need-COMP=PAS.A /àggáár/hunter.GEN
 ‘Food is needed by the hunter.’

- (55) *ɔɲ* *é* **ɬɔɔ=n** *wéɖán*
 meat of /ɬɔɔ/cow.GEN=DEF good
 ‘Meat of the cow is good.’

The genitive function is not marked with a suffix, but only by a tone change. Nouns with M or MH root tone melodies have HL tone melody in the genitive case. Nouns with all other root tone melodies have ML tone melody in the genitive case.

Table 13: Genitive noun tone changes

Root tone melody	Genitive tone melody
M, MH	HL
All other melodies	ML

In (56), singular nouns with various root tone melody are compared in genitive and non-genitive forms. Nouns with M and MH root tone melody have HL melody in genitive forms. Nouns with all other root tone melody have ML tone melody in genitive forms. The two tones of the genitive melodies both assign to the stem-final syllable and the first tone spreads leftward to all preceding syllables as in *kūḍūūrī-gg* ‘bird’. If there is a clitic following the stem such as the definite clitic =*à* in *ténḍás=à* ‘bird=DEF’, the genitive stem-final tone is delinked and reassigned to the clitic.

(56) Genitive singular and plural nouns with various root tone melodies

Root tone	GEN tone	N SG	GEN N SG	GEN DEF N SG	
H	ML	t̚s̚	t̚ḍ̚	t̚ḍ̚ = n	‘cow’
M	HL	mīi	mîi	mîi = n	‘goat’
L	ML	ḍ̚i	ḍ̚îi	ḍ̚îi = n	‘rat’
HL	ML	wírî	wîrî	wîrî = n	‘bird’
HM	ML	súl̚	sûl̚	sûl̚ = n	‘clan member’
ML	ML	ṇūūi	ṇūūîi	ṇūūîi = n	‘leopard’
LH	ML	àggáár	àggāàr	àggāàr = à	‘hunter’
LM	ML	m̚ràā	m̚rāà	m̚rāà = n	‘governor’
MH	HL	ténḍás	ténḍàs	ténḍàs = à	‘bird type’
MHM	ML	kūḍúúrîi	kūḍūūrîi	kūḍūūrîi = n	‘bird type’

The same tone changes take place for plural genitive nouns.

(57) Genitive singular and plural nouns with various root tone melodies

Root tone	GEN tone	N PL	GEN N PL	GEN DEF N PL	
H	ML	t̚s̚-gg	t̚ḍ̚-gg	t̚ḍ̚-gg = ḍ̚	‘cow’
M	HL	mīi-gg	mîi-gg	mîi-gg = ḍ̚	‘goat’
L	ML	ḍ̚i-gg	ḍ̚îi-gg	ḍ̚îi-gg = ḍ̚	‘rat’
HL	ML	wírî-igg	wîrî-igg	wîrî-igg = ḍ̚	‘bird’
HM	ML	súl̚-ḍ̚gg	sûl̚-ḍ̚gg	sûl̚-ḍ̚gg = ḍ̚	‘clan member’
ML	ML	ṇūūy-g	ṇūūy-g	ṇūūy-g = ḍ̚	‘leopard’
LH	ML	àggáár-g	àggāàr-g	àggāàr-g = à	‘hunter’
LM	ML	m̚ràā-gg	m̚rāà-gg	m̚rāà-gg = à	‘governor’
MH	HL	ténḍás-agg	ténḍàs-agg	ténḍàs-agg = à	‘bird type’
MHM	ML	kūḍúúrîi-gg	kūḍūūrîi-gg	kūḍūūrîi-gg = ḍ̚	‘bird type’

There is some variation in the tone of genitive forms. Sometimes with the same speaker with the same words, the genitive Low tone is not delinked even though it is reassigned to a plural clitic (*mû-gg=ə* ‘goat.GEN = DEF’, *āggāâr-g=à* ‘hunter.GEN = DEF’). Sometimes genitive nouns have Low tone melody instead of ML tone melody (*kùḍùrîi* ‘bird type’). There are other variations besides these, but with the exception of ML root tone melodies, genitive forms differ in tone from non-genitive forms.

7 Noun word

7.1 Introduction

In this chapter we present a morphological description of the noun word, including clitics for copular (COP), definite (DEF), locative copular (LCM), dative (DAT), accompaniment (ACM), relative clause definite (RDM), and clause-final subordinate (SBO) markers. In chapter 4, these clitics were shown to attach to two or more word categories.

Noun word morphology involves clitics attached to noun stems, rather than to noun roots. Whereas suffixes attached to noun roots attach to underlying segments, clitics attached to noun stems attach to surface segments. The accompaniment morpheme attaches a different clitic for vowel-final stems (= *nE*) as in (1a) than for consonant-final stems (= *E*) as in (d). Because the accompaniment clitic =*nE* attaches to a surface-final segment in (1a), it is also analyzed to attach to surface-final segments in (1b-c). Thus, the singular surface forms of (1b-c) are *káḏ = nē* ‘hyena’, *ᵑᵑᵑᵑᵑᵑ = nē* ‘leopard’ with stem-final surface vowels, whereas the root underlying forms are /*kaw*/ or /*kab*/, /*ᵑᵑᵑᵑᵑᵑ*/ or /*ᵑᵑᵑᵑᵑᵑ*/ ³¹.

(1) Roots and stems compared

	Underlying root	Surface root	Noun stem suffix	Noun word clitic	
	UR	N.SG	N-PL	N.SG=ACC	
(a)	/ᵑᵑ/	ᵑᵑ	ᵑᵑ-gg	ᵑᵑ = nē	‘cow’
(b)	/kaw/	káḏ	kâw-g	káḏ = nē	‘hyena’
(c)	/ᵑᵑᵑᵑ/	ᵑᵑᵑᵑ	ᵑᵑᵑᵑ-g	ᵑᵑᵑᵑ = nē	‘leopard’
(d)	/kaam/	kààm	kààm-g	kààm = ē	‘cow type’

Suffixes are attached to the underlying-final segments of roots, whereas clitics are attached to the surface-final segments of stems. However, in the case of copular and definite clitics, the underlying-final stem segment can determine which clitic allomorph attaches.

Just as noun roots attach different suffixes depending on the root-final segment, noun stems attach different clitics depending on the stem-final segment. Each grammatical noun clitic has different segmental or tonal allomorphs, sometimes differing according to the following stem-final segments: underlying

³¹ As discussed in 2.3.6, although there is no way to distinguish whether the underlying-final segments are plosives or approximants, the definite clitic =*An* attaches to stems with underlying-final approximants and the definite clitic =*Vn* attaches to stems with underlying-final vowels.

approximants δ , y or w in monosyllabic stems, long surface vowels in monosyllabic stems, surface vowels in polysyllabic stems, surface consonants, and surface consonants of plural stems. Table 14 lists the various clitics on stem-final segments and (2) gives example nouns with the same order. Those that have not been attested are left blank.

Table 14: Noun word clitics and their allomorphs

Stem-final segment	COP	DEF	LCM/DAT	ACM	RDM	SBO
(Monosyllabic) underlying approximant δ , w , y	= $\tilde{A}n$	= An	= $\tilde{A}n$	= $n\tilde{E}$		= $n\tilde{E}$
(Monosyllabic) long vowel	= $\tilde{V}n$	= Vn	= $\tilde{V}n$	= $n\tilde{E}$		= $n\tilde{E}$
(Polysyllabic) vowel	= \tilde{n}	= n	= \tilde{n}	= $n\tilde{E}$	= \tilde{E}	= $n\tilde{E}$
Consonant	= \tilde{A}	= \tilde{A}	= $\tilde{A}n$	= \tilde{E}	= \tilde{E}	= \tilde{E}
Consonant N PL	= \tilde{A}	= \tilde{A}	= $\tilde{A}n$	= \tilde{E}	= \tilde{E}	= \tilde{E}

(2a) Noun word clitic allomorphs on various stem-final nouns

N	COP	DEF	LCM/DAT	
mēēð	mēēð = ān	mēēð = ān	mēēð = ān	‘tree type’
sāð	sā.ð = n/sāw = ān	sā.ð = n/sāw = ān	sā.ð = n/sāw = ān	‘shoe’
rēē	rēē. = ēn	rēē. = ēn	rēē. = ēn	‘cotton’
ābbéé	ābbéé = n	ābbéé = n	ābbéé = n	‘uncle’
ḍām	ḍām = ð	ḍām = ó	ḍām = ðn	‘Arab’
ḍām-g	ḍām-g = ð	ḍām-g = ó	ḍām-g = ðn	‘Arabs’

(b) Noun word clitic allomorphs on various stem-final nouns

N	ACM	RDM	SBO	
mēēð	mēēð = nē		mēēð = né	‘tree type’
sāð	sāð = nē		sāð = né	‘shoe’
rēē	rēē = nē		rēē = né	‘cotton’
ābbéé	ābbéé = nē	ābbéé. = é	ābbéé = né	‘uncle’
ḍām	ḍām = ē	ḍām = é	ḍām = é	‘Arab’
ḍām-g	ḍām-g = ē	ḍām-g = è	ḍām-g = é	‘Arabs’

The tone lowering rule of {M9} in 3.4.3 states that suffix-initial High and Mid tone are lowered following stem-final Low tone. Most of the noun clitics are in accordance with this rule, but the following are not: the copular clitics = $\tilde{A}n$, = $\tilde{V}n$ and accompaniment clitic = $n\tilde{E}$ attached to underlying approximants and long vowel-final stems. In all noun words, tone assignment takes the stem tone as its point of departure.

7.2 Copular clitic

7.2.1 Copular segmental morphology

In answer to questions such as *ɲĩn nɛɛ* ‘What is this?’ and various other non-verbal clauses described in 14.6, a copular clitic can be attached to noun stems.

- (3a) $f\acute{e}\acute{t}f\acute{a}=n$ $\grave{a}gg\acute{a}r=\grave{a}$ (b) $j\grave{o}gg=\acute{o}$ $\grave{a}gg\acute{a}r-g=\grave{a}$
 Feetfa =DEF hunter =COP people = DEF hunter-PL-COP
 ‘Feetfa is a hunter.’ ‘The people are hunters.’

The clitic $=\bar{A}n$ is attached to monosyllabic stems with underlying final approximant, the clitic $=\bar{V}n$ is attached to monosyllabic stems with long vowel, the clitic $=\bar{n}$ is attached to polysyllabic vowel-final stems, and the clitic $=\bar{A}$ is attached to consonant-final singular stems. The clitic $=\bar{A}$ is attached to plural nouns, which are always consonant-final.

Table 15: Copular clitics

Stem-final segment	COP N SG	COP N PL
(Monosyllabic) underlying approximant	$=\bar{A}n$	
(Monosyllabic) long vowel	$=\bar{V}n$	
(Polysyllabic) vowel	$=\bar{n}$	
Consonant	$=\bar{A}$	$=\bar{A}$

Monosyllabic underlying approximant-final singular stems

In (4), the copular clitic $=\bar{A}n$ is attached to singular nouns with stem-final dental approximant δ . The clitic vowel takes the [ATR] and [round] features of the stem {M3-4}.

(4) Copular clitic $=\bar{A}n$ on singular nouns with stem-final δ

N SG	COP N SG	
$j\acute{a}\acute{a}\delta$	$j\acute{a}\acute{a}\delta=\bar{a}n$	‘old clothes’
$m\grave{o}\grave{o}\delta$	$m\grave{o}\grave{o}\delta=\bar{o}n$	‘grandfather’
$m\acute{e}\acute{e}\delta$	$m\acute{e}\acute{e}\delta=\bar{a}n$	‘tree type’
$k\bar{u}\bar{u}\delta$	$k\bar{u}\bar{u}\delta=\bar{u}n$	‘shadow’
$y\grave{a}\grave{a}\delta$	$y\grave{a}\grave{a}\delta=\bar{a}n$	‘sister’

As shown in (5), monosyllabic stems with underlying final approximants w, y sometimes elide the vowel of the singular copular clitic $=\bar{A}n$ and sometimes retain it, depending on the underlying-final segment and the speed of the utterance. When the underlying approximant surfaces as a vowel, it becomes the onset to a second syllable. When the copular clitic vowel is retained, the stem-final vowel surfaces as

an approximant.

(5) **Copular clitic = $\bar{A}n$ on monosyllabic underlying approximant final stems**

	Stem-final	N SG	COP N SG	
(a)	aɔ /aw/	káɔ̃	ká.ɔ̃ = n	ká.w = àn ‘hyena’
(b)	aaɔ /aaw/	bààɔ̃	bàà.ɔ̃ = n	bàà.w = ān ‘father’
(c)	ɛɔ /ɛw/	bɛ̃ɔ̃	bɛ̃.ɔ̃ = n	bɛ̃.w = àn ‘tree type’
(d)	aɛ /ay/	ṭāɛ̃	ṭā.ɛ̃ = n	ṭā.y = àn ‘giraffe’
(e)	aaɛ /aay/	gááɛ̃	gáá.ɛ̃ = n	gáá.y = àn ‘tree type’
(f)	əɪ /əy/	màðḁ̃	màð.ḁ̃ = n	màð.y = ɔ̃n ‘farm fence’
(g)	ui /uy/	mūi	mū.ḁ̃ = n	mū.y = ɔ̃n ‘wildebeest’
(h)	uui /uuy/	ṇūūi	ṇūū.ḁ̃ = n	ṇūū.y = ɔ̃n ‘leopard’

Most monosyllabic stems with underlying-final approximant *w* and *y* are phonetically somewhere in-between the two utterances of (5). In stems with underlying-final velar approximant *w* as in (a-c), the surface form is usually close to having the velar approximant. In [-ATR] stems with underlying final palatal approximant *y* as in (d-e), the surface form is usually half way between the approximant *y* and vowel *ɛ*. In [+ATR] stems with underlying final *y* as in (f-h), the surface form is usually close to the vowel *i*. Also, the faster the utterance, the closer the surface form is to the shorter form with a stem-final vowel, regardless of the underlying stem-final segment.

Monosyllabic long vowel-final singular stems

When the singular copular clitic = $\bar{V}n$ attaches to monosyllabic long vowel-final stems, the clitic becomes a second syllable, in accordance with {M2} of 3.1. The clitic vowel takes on all the features of the stem-final vowel to which it is juxtaposed.

(6) **Copular clitic = $\bar{V}n$ on monosyllabic long vowel final stems**

	Stem-final	N SG	COP N SG	
	ɛ	rēē	rēē. = ēn	‘cotton’
	a	máà	máá. = àn	‘house’
	ɔ	ṭóó	ṭóó. = ɔ̃n	‘cow’
	i	jīi	jīi. = ìn	‘turkey’
	ə	wḁḁ	wḁḁ. = ɔ̃n	‘shade’
	u	bùù	bùù. = ūn	‘chicken coop roof’

Polysyllabic vowel-final singular stems

The copular clitic = \bar{n} is attached to polysyllabic singular nouns with various stem-final long and short vowels in (7a-j). The clitic also attaches to nouns with underlying-final vowel sequence such as *būḁ̃* ‘tree type’ in (k) and to nouns with

underlying-final velar plosives *g* such as *áŋé(g)* ‘elephant’ in (l). The language treats these singular nouns as vowel-final stems, attaching the vowel-final clitic = *n̄* instead of the consonant-final clitic = *Ā*.

(7) **Copular clitic = *n̄* on singular nouns with stem-final vowels**

	Stem-final	N SG	COP N SG	
(a)	εε	ābbéé	ābbéé = n	‘uncle’
(b)	ii	ūrīī	ūrīī = n	‘ostrich’
(c)	aa	wááyáá	wááyáá = n	‘bird type’
(d)	əə	gṣūlḍəə	gṣūlḍəə = n	‘fish’
(e)	ɔɔ	mélṣṣ	mélṣṣ = n	‘sugar cane’
(f)	uu	ṣyúú	ṣyúú = n	‘tooth brush’
(g)	a	ṭááḍà	ṭááḍà = n	‘grandmother’
(h)	ə	ṣŋə	ṣŋə = n	‘little girl’
(i)	ɔ	ḍnsḍ	ḍnsḍ = n	‘cooking plate’
(j)	u	kúúfú	kúúfú = n	‘crushed beans’
(k)	uə	būə	bū.ə = n	‘tree type’
(l)	(g)	áŋé(g)	áŋé = n	‘elephant’

Consonant-final singular stems

In (8), the copular clitic = *Ā* is attached to singular nouns with various stem-final consonants.

(8) **Copular clitic = *Ā* on singular nouns with stem-final consonants**

	Stem-final	N SG	COP N SG	
	bb	ʃíləbb	ʃíləbb = ə	‘water spring’
	ḍ	māāḍ	māāḍ = ā	‘snake type’
	d	dṣd	dṣd = ɔ	‘bird type’
	ʃ	bìmiríʃ	bìmiríʃ = ɔ	‘bird type’
	gg	kàmàlḍgg	kàmàlḍgg = ə	‘woman’
	s	márṣṣs	márṣṣs = ɔ	‘spider’
	m	ḍṣm	ḍṣm = ɔ	‘Arab’
	n	séèn	séèn = à	‘ruler’
	ɲ	ɲéèɲ	ɲéèɲ = à	‘spear type’
	ŋ	mṣɲ	mṣɲ = ɔ	‘wild cat type’
	r	púr	púr = ū	‘flower’
	l	ḍəŋḍl	ḍəŋḍl = ə	‘millipede’

Plural stems

With plural nouns, the copular clitic is = *Ā*. In (9), the singular nouns and singular copular forms are given for comparison.

(9) Copular clitic =*Ā* on plural nouns

Suffix	N SG	N PL	COP N SG	COP N PL	
- <i>gg</i>	wáár	wáār-g	wáár = ā	wáār-g = à	‘insect’
- <i>gg</i>	wááyáá	wááyáá-gg	wááyáā = n	wááyáá-gg = à	‘bird’
- <i>gg</i>	kúúfú	kúúfú-gg	kúúfū = n	kúúfú-gg = ù	‘beans’
- <i>Āgg</i>	célǫ	célǫ-āgg	célǫ = ā	célǫ-āgg = à	‘broom’
- <i>ĒĒgg</i>	púr	púr-īgg	púr = ū	púr-īgg = ò	‘flower’
- <i>ĀAgg</i>	íl	íl-òògg	íl = òn	íl-òògg = ò	‘horn’
- <i>ĀĀǫ</i>	kàmàlògg	kàmàlògg-ààǫ	kàmàlògg = ò	kàmàlògg-ààǫ = à	‘woman’
- <i>ǫ</i>	ābbéé	ābbéé-ǫ	ābbéé = n	ābbéé-ǫ = à	‘uncle’
- <i>ǫ/-gg</i>	gèrmù-ǫ	gèrmù-gg	gèrmù = ǫ = ù	gèrmù-gg = ù	‘insect’
- <i>Ed/-gg</i>	jínǫ-íǫ	jínǫ-g	jínǫ-íǫ = ò	jínǫ-g = ò	‘louse’

7.2.2 Tonal morphology of the copular clitic

The singular copular clitics =*Ān*, =*Ūn*, =*Ŋn*, have underlying Mid tone and the plural copular clitic =*Ā* has underlying Low tone. The singular copular clitics =*Ān*, =*Ūn* attached to approximants and long vowel-final stems are an exception to the tone lowering rule of {M9} in 3.4.3 in that clitic Mid tone does not assimilate to stem-final Low tone.

Monosyllabic underlying approximant-final stems

In the noun *yààð* = *ān* ‘sister=COP’ of (10) with stem-final dental approximant *ð*, the Mid clitic tone does not assimilate to the preceding stem-final Low tone.

(10) Copular clitic =*Ān* on stem-final *ð* nouns with three tone melodies

Tone	N SG	N PL	COP N SG	COP N PL	
H	jááð	jááð-āagg	jááð = ān	jááð-āagg = à	‘old clothes’
M	māðð	māðð-óóǫ	māðð = òn	māðð-óóǫ = ò	‘grandfather’
L	yààð	yààð-āāǫ	yààð = ān	yààð-āāǫ = à	‘sister’

Similarly, Mid tone of the copular clitic =*Ān* does not assimilate to preceding Low tone in monosyllabic stems with underlying-final approximants *w* and *y*. However, the Low tone of HL and ML stem tone melodies delinks and reassigns to the clitic syllable in *ká.w* = *àn* ‘hyena=COP’ and *nūū.y* = *àn* ‘leopard=COP’, even though the clitic has underlying Mid tone, in contradiction of {M6}. In these forms, the reassigned Low tone replaces the clitic Mid tone. The same tone melodies surface on the noun words regardless of whether the underlying stem-final approximant surfaces as a vowel or approximant.

(11) **Copular clitic = $\bar{A}n$** **on monosyllabic approximant final stems with various tone melodies**

Tone	N SG	N PL	COP N SG		COP N PL	
H	ááé	ááy-g	áá.ɛ = n	áá.y = ān	ááy-g = à	‘honey’
M	mūī	mūy-g	mū.ī = n	mū.y = òn	mūy-g = ò	‘wildebeest’
L	bààð	bààw-āāð	bàà.ɔ̄ = n	bàà.w = ān	bààw-āāð = à	‘father’
HL	káð	kāw-g	ká.ð = n	ká.w = àn	kāw-g = à	‘hyena’
ML	ṵūūī	ṵūūy-g	ṵūū.ī = n	ṵūū.y = òn	ṵūūy-g = ò	‘leopard’

Monosyllabic long vowel final stems

In monosyllabic long vowel-final stems, Mid tone of the copular clitic = $\bar{V}n$ also does not assimilate to preceding Low stem tone. Stem-final High tone spreads onto the copular clitic, juxtaposed to the stem. The final Low tone of HL and ML melodies is delinked from the stem and reassigns to the clitic, replacing the Mid clitic tone, in contradiction of {M6}.

(12) **Copular clitic = $\bar{V}n$** **on monosyllabic long vowel final stems with various tone melodies**

Tone	N SG	N PL	COP N SG	COP N PL	
H	cáá	cáá-gg	cáá. = ān	cáá-gg = à	‘wild cat’
M	mīī	mīī-gg	mīī. = īn	mīī-gg = ò	‘goat’
L	ḍīī	ḍīī-gg	ḍīī. = īn	ḍīī-gg = ò	‘rat’
HL	máà	máà-gg	máá. = àn	máà-gg = à	‘house’
ML	jīī	jīī-gg	jīī. = īn	jīī-gg = ò	‘turkey’
MH	mīí	mīí-gg	mīī. = īn	mīí-gg = ò	‘chicken’

Polysyllabic vowel final stems

In (13), the copular clitic = \bar{n} is attached to singular polysyllabic nouns with various tone melodies and stem-final vowels. The Mid clitic tone is assigned to stems with

(13) **Copular clitic = \bar{n}** **on vowel-final singular nouns with various tone melodies**

Tone	N SG	N PL	COP N SG	COP N PL	
H	wááyáá	wááyáá-gg	wááyáā = n	wááyáá-gg = à	bird type’
M	ūrīī	ūrīī-gg	ūrīī = n	ūrīī-gg = ò	‘ostrich’
L	ònsò	ònsò-gg	ònsò = n	ònsò-gg = ò	‘cooking plate’
HL	órḍàà	órḍàà-gg	órḍàà = n	órḍàà-gg = à	‘army’
HM	sáárfāā	sáárfāā-gg	sáárfāā = n	sáárfāā-gg = à	‘rat’
ML	gṵūlḍàà	gṵūlḍàà-gg	gṵūlḍàà = n	gṵūlḍàà-gg = ò	‘fish’
LM	mòrāā	mòrāā-gg	mòrāā = n	mòrāā-gg = à	‘governor’
MH	pēēḍáá	pēēḍáá-gg	pēēḍáā = n	pēēḍáá-gg = à	‘crack’

final High tone, but is not assigned to stems with final Low tone in accordance with {M9}.

Consonant-final stems

In (14), the copular clitic = \bar{A} attaches to nouns with stem-final consonants and various tone melodies. The Mid tone of the clitic = \bar{A} assimilates to stem-final Low tone in accordance with {M9}.

(14) Copular clitic = \bar{A}

on consonant-final singular nouns with various tone melodies

Tone	N SG	N PL	COP N SG	COP N PL	
H	wáár	wáār-g	wáár = ā	wáār-g = à	‘insect type’
M	ḍōm	ḍōm-g	ḍōm = ɔ̄	ḍōm-g = ɔ̄	‘Arab’
L	kààm	kààm-g	kààm = à	kààm-g = à	‘cow type’
HL	séèn	séèn-g	séèn = à	séèn-g = à	‘ruler’
HM	ʃórgāāl	ʃórgāāl-g	ʃórgāāl = ā	ʃórgāāl-g = à	‘bird type’
ML	kɔ̄ðèl	kɔ̄ðèl-g	kɔ̄ðèl = à	kɔ̄ðèl-g = à	‘baboon’
LH	àggáár	àggáār-g	àggáár = ā	àggáār-g = à	‘hunter, rider’
LM	gḍēn	gḍēn-g	gḍēn = ā	gḍēn-g = à	‘metal worker’
MH	bāár	bāár-g	bāár = ā	bāár-g = à	‘tribe member’

In stems such as *wáār-g* ‘insect type’ with High-Mid tone assigned to the same stem-final syllable, the Mid tone assimilates to the clitic-final Low tone (*wáār-g = à*). This is in accordance with the stem Mid tone lowering rule of {M7} in 3.4.2.

(15) Stem Mid tone assimilating to clitic Low

Plural formation suffix	N PL	COP N PL	
-g	wáār-g	wáār-g = à	‘insect type’
-g	àggáār-g	àggáār-g = à	‘hunter, rider’
-gg	pēēḍáā-gg	pēēḍáā-gg = à	‘crack’
-Āgg	ḡārná-āgg	ḡārná-āgg = à	‘leach’
-ÉĒgg	púr-īgg	púr-īgg = ɔ̄	‘flower’
-ÉĒgg	rāāy-éēgg	rāāy-éēgg = à	‘quarrel’
-ḍ	ābbéē-ḍ	ābbéē-ḍ = à	‘uncle’
-ḍ/- $\bar{A}\bar{A}\bar{d}$	mōy-ṣḍḍ	mōy-ṣḍḍ = ɔ̄	‘ancestor’
-ḍ/-g	kāān-g	kāān-g = à	‘fly’
-ḍ/-gg	lōggṣḍḍ-gg	lōggṣḍḍ-gg = ɔ̄	‘locust’

7.3 Definite clitic

The definite clitic indicates the speaker believes a word is active or known information in the mind of the hearer, as illustrated in (16a) and (b). In narratives, the first mention of a participant can be with the definite clitic if the participant is

already know in the mind of the hearers. In (17a), the participant Minjib is unknown to hearers and introduced without the definite clitic, whereas in (b) the Baggara people group are notorious in Gaahmg culture and introduced with the definite clitic.

- (16a) wáár = **á** wēḏá = n (b) wáār-g = **á** wíḏ-gg = ḏ
 insect=DEF good = COP insect-PL=DEF good-PL = COP
 ‘The insect is good.’ ‘The insects are good.’
- (17a) jēn fāā mán bélán mīnjīb. ḏ ē mūn náán
 man old certain named Minjib and with time that
 ‘There was an old man named Minjib. At that time
- (b) bāārg = á ḡáṣ-ḏ n jnā-lg nà ḏn-g = ì,
 Baggara = DEF search.for girl-PL REL young-PL = RDM
 /ḡáw/-CONT.P
 the Baggara (people group) were kidnapping young girls.’ (Minj1-2)

The same definite clitic =*A* is attached to (non-approximant) consonant-final stems. This includes many singular nouns and all plural nouns. The definite clitic =*An* is attached to monosyllabic underlying approximant-final stems, the clitic =*Vn* is attached to monosyllabic long vowel-final stems, the clitic =*n* is attached to polysyllabic vowel-final stems.

Table 16: Definite clitics

Stem-final segment	DEF
(Monosyllabic) underlying approximant	= <i>An</i>
(Monosyllabic) long vowel	= <i>Vn</i>
(Polysyllabic) vowel	= <i>n</i>
Consonant	= <i>Á</i>

Definite clitics are the same segmentally as copular clitics. Therefore, the segmental behaviour of the definite clitic will not be illustrated further, and the focus of the presentation will be on its tone. The definite clitics =*An*, =*Vn*, =*n* have no underlying tone and the definite clitic =*Á* attached to stem-final consonants has underlying High tone.

Monosyllabic underlying approximant-final stems

In (18), the definite clitic =*An* is attached to nouns with the stem-final dental approximant *ḏ* and three tone melodies. The clitic vowel takes the stem-final tone {M5}.

(18) **Definite clitic = *An* on stem-final *o* nouns with three tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	jááǎ	jááǎ-āāgg	jááǎ = án	jááǎ-āāgg = á	‘old clothes’
M	mǎǎǎ	mǎǎǎ-ǎǎǎ	mǎǎǎ = ǎn	mǎǎǎ-ǎǎǎ = ǎ	‘grandfather’
L	yàǎǎ	yàǎǎ-āāǎ	yàǎǎ = àn	yàǎǎ-āāǎ = á	‘sister’

The definite clitic = *An* is also attached to monosyllabic approximant-final stems in which the final underlying approximant *w* or *y* can surface as a vowel or as an approximant. In either, the noun word tone melody is the same. When the clitic vowel is not elided, it takes the stem-final tone {M5-6}.

(19) **Definite clitic = *An* on monosyllabic approximant final stems with various tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	ááé	ááy-g	áá.é = n	ááy = án	ááy-g = á ‘honey’
M	mūī	mūy-g	mū.ī = n	mū.y = ǎn	mūy-g = ǎ ‘wildebeest’
L	bàǎǎ	bàǎw-āāǎ	bàǎ.ǎ = n	bàǎ.w = àn	bàǎw-āāǎ = á ‘father’
HL	káǎ	kâw-g	ká.ǎ = n	ká.w = àn	kâw-g = ā ‘hyena’
ML	ǰūūī	ǰūūy-g	ǰūū.ī = n	ǰūū.y = ǎn	ǰūūy-g = ǎ ‘leopard’

Monosyllabic long vowel-final stems

Similarly, the definite clitic = *Vn* is juxtaposed to monosyllabic long vowel final stems {M2} and takes the stem-final tone {M5-6}.

(20) **Definite clitic = *Vn* on monosyllabic long vowel final stems with various tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	cáá	cáá-gg	cáá. = án	cáá-gg = á	‘wild cat’
M	mīī	mīī-gg	mīī. = ín	mīī-gg = ǎ	‘goat’
L	ǎīī	ǎīī-gg	ǎīī. = ǎn	ǎīī-gg = ǎ	‘rat’
HL	máà	máà-gg	máá. = àn	máà-gg = ā	‘house’
ML	ǰīī	ǰīī-gg	ǰīī. = ǎn	ǰīī-gg = ǎ	‘turkey’
MH	mīí	mīí-gg	mīī. = ín	mīí-gg = ǎ	‘chicken’

Polysyllabic vowel-final stems

In (21), the definite clitic = *n* with no underlying tone is attached to nouns with stem-final vowels and various tone melodies, and does not affect the stem tone.

(21) **Definite clitic = *n*****on vowel-final singular nouns with various tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	wááyáá	wááyáá-gg	wááyáá = n	wááyáá-gg = á	bird type'
M	ūrīī	ūrīī-gg	ūrīī = n	ūrīī-gg = ́	'ostrich'
L	ònsò	ònsò-gg	ònsò = n	ònsò-gg = ̄	'cooking plate'
HL	órḍàà	órḍàà-gg	órḍàà = n	órḍàà-gg = ā	'army'
HM	sáárfāā	sáárfāā-gg	sáárfāā = n	sáárfāā-gg = á	'rat'
ML	gḍūldḍò	gḍūldḍò-gg	gḍūldḍò = n	gḍūldḍò-gg = ̄	'fish'
LM	mòrāā	mòrāā-gg	mòrāā = n	mòrāā-gg = á	'governor'
MH	pēēḍáá	pēēḍáá-gg	pēēḍáá = n	pēēḍáá-gg = á	'crack'

Consonant-final stems

In (22), the definite clitic = *Á* with underlying High tone is attached to nouns with stem-final consonants and various stem tone melodies. Clitic High tone becomes Mid when the clitic is attached to stem-final Low tone, in accordance with {M9}.

(22) **Definite clitic = *Á*****on consonant-final singular nouns with various tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	wáár	wáār-g	wáár = á	wáār-g = á	'insect type'
M	ḍḍēm	ḍḍēm-g	ḍḍēm = ́	ḍḍēm-g = ́	'Arab'
L	kààm	kààm-g	kààm = ā	kààm-g = ā	'cow type'
HL	séèn	séèn-g	séèn = ā	séèn-g = ā	'ruler'
HM	jórgāāl	jórgāāl-g	jórgāāl = á	jórgāāl-g = á	'bird type'
ML	kḍòèl	kḍòèl-g	kḍòèl = ā	kḍòèl-g = ā	'baboon'
LH	àggáár	àggáár-g	àggáár = á	àggáár-g = á	'hunter, rider'
LM	gḍēn	gḍēn-g	gḍēn = á	gḍēn-g = á	'metal worker'
MH	bāár	bāár-g	bāár = á	bāár-g = á	'tribe member'

7.4 Relative clause definite clitic

Relative clauses are marked or unmarked for definiteness just as noun phrases. When the head of the relative clause is known information, the relative clause definite clitic = *É*/=*È* attaches to the clause-final word. Relative clause definite clitics agree in number with the noun modified. In (a), the singular clitic with High tone on *fáá-gg* = *É* 'lines' agrees with the singular noun *kásón-gí* 'friendship'. In (b), the plural clitic with Low tone on *léél-éégg* = *È* 'grasses' agrees with the plural noun *jéegg* 'things'.

- (23a) kásónɡí ná àḍ ná é fáá-gg é fáá-gg = *É*
 friendship REL.SG sits REL.SG in line-PL by line-PL = RDM
 'The friendship which sits in lines by lines.' (Tifa11)

7.5.1 Locative and dative segmental morphology

Locative copula clitic

In non-verbal locative clauses, the singular or plural locative copula *îin/ēggàn* separates the subject from the predicate. However in fast speech, both singular and plural copulas attach to the subject noun phrase in the form of the clitic =*Ān*. The singular locative copula *îin/ēēn* of (26a) is replaced by the clitic =*Ān* attached to the subject noun in (b). The plural locative copula *ēggàn* of (c) is replaced by the same clitic in (d).

(26) Locative copular clauses

- (a) àggáár **îin** wéé bèŋɲ
 hunter LCM house beside
 'A hunter is beside a house.'
- (b) àggáár = **ān** wéé bèŋɲ
 hunter=LCM house beside
- (c) àggáār-g **ēggàn** wéé bèŋɲ
 hunter-PL LCM house beside
- (d) àggáār-g = **ān** wéé bèŋɲ
 hunter-PL=LCM house beside
 'Hunters are beside a house.'

Dative clitic

The dative has the semantic roles of beneficiary and recipient as seen in the examples of (27). In general, dative constructions are not used with inanimate nouns.

(27) Dative nouns in clauses

- (a) ē bēē càðr = **ān**
 he says rabbit-DAT
 'He said to the rabbit . . .'
- (b) á gáf jèēm càðr-ēēgg = **ān**
 I give something rabbit-PL=DAT
 'I give something to the rabbits.'
- (c) tíssə ɿnēgg bīgg sāfāḍḍín = **ān**
 asked questions some.PL Sayfadin-DAT
 'They asked Sayfadin some questions.'

The locative copular and dative clitic =*Ān* is attached to monosyllabic underlying approximant-final stems, the clitic =*Vn* is attached to monosyllabic long vowel-final stems, the clitic =*n̄* is attached to polysyllabic vowel-final stems, and the clitic =*Ān* is attached to consonant-final stems. In stems with final approximants and stems with final vowels, the locative, dative, definite, and copular forms of nouns

are segmentally identical, differing sometimes only by tone. In stems with final consonant, locative and dative forms of nouns differ from definite and copular forms by a word-final *n*.

Table 18: Locative copular and dative clitics

Stem-final segment	LCM/DAT
(Monosyllabic) underlying approximant	= $\tilde{A}n$
(Monosyllabic) long vowel	= $\tilde{V}n$
(Polysyllabic) vowel	= \tilde{n}
Consonant	= $\tilde{A}n$

Monosyllabic underlying approximant-final singular stems

In (28), the locative and dative clitic = $\tilde{A}n$ is attached to singular nouns with stem-final dental approximant δ . The clitic vowel takes the [ATR] and [round] features of the root {M3-4}.

(28) **Locative and dative clitic = $\tilde{A}n$ on singular nouns with stem-final δ**

N SG	LCM/DAT N SG	
ʒááδ	ʒááδ = $\tilde{a}n$	‘old clothes’
mḡḡδ	mḡḡδ = $\tilde{o}n$	‘grandfather’
mḡḡδ	mḡḡδ = $\tilde{a}n$	‘tree type’
kūūδ	kūūδ = $\tilde{u}n$	‘shadow’
yààδ	yààδ = $\tilde{a}n$	‘sister’

Most monosyllabic stems with underlying-final approximants *w*, *y* are phonetically somewhere inbetween the two utterances of (29).

(29) **Locative/Dative clitic = $\tilde{A}n$ on monosyllabic underlying approximant final stems**

	Stem-final	N SG	LCM/DAT N SG	
(a)	aɔ /aw/	káδ	ká.δ = n ká.w = $\tilde{a}n$	‘hyena’
(b)	aaw /aaw/	bààδ	bàà.δ = n bàà.w = $\tilde{a}n$	‘father’
(c)	ɛɔ /ɛw/	bḡδ	bḡ.δ = n bḡ.w = $\tilde{a}n$	‘tree type’
(d)	aɛ /ay/	ṭāḡ	ṭā.ḡ = n ṭā.y = $\tilde{a}n$	‘giraffe’
(e)	aaɛ /aay/	gááḡ	gáá.ḡ = n gáá.y = $\tilde{a}n$	‘tree type’
(f)	əəi /əəy/	mḡḡḡ	mḡḡ.ḡ = n mḡḡ.y = $\tilde{o}n$	‘farm fence’
(g)	ui /uy/	mūī	mū.ī = n mū.y = $\tilde{o}n$	‘wildebeest’
(h)	uui /uuy/	ṽūūī	ṽūū.ī = n ṽūū.y = $\tilde{o}n$	‘leopard’

Monosyllabic long vowel-final singular stems

As in copular and definite forms, when locative copula and dative clitics = $\tilde{V}n$ attach to monosyllabic long vowel-final stems, the clitic becomes a second syllable

{M2}. The clitic vowel takes on all the features of the stem-final vowel to which it is juxtaposed.

(30) **Locative/Dative clitic = $\tilde{V}n$ on monosyllabic long vowel final stems**

Stem-final	N SG	LCM/DAT N SG	
ε	rēē	rēē. = ēn	‘cotton’
a	māā	māā. = ān	‘house’
ɔ	ṭóó	ṭóó. = ón	‘cow’
i	jīī	jīī. = ín	‘turkey’
ə	wāā	wāā. = ɔn	‘shade’
u	būū	būū. = ūn	‘chicken coop roof’

Polysyllabic vowel-final singular stems

In (31), the locative copular and dative clitic = \tilde{n} is attached to singular nouns with various stem-final long and short vowels.

(31) **Locative/Dative clitic = \tilde{n} on singular nouns with stem-final vowels**

	Stem-final	N SG	LCM/DAT N SG	
(a)	εε	ābbéé	ābbéé = n	‘uncle’
(b)	ii	ūrīī	ūrīī = n	‘ostrich’
(c)	aa	wááyáá	wááyáā = n	‘bird type’
(d)	əə	gōūlḍḍə	gōūlḍḍə = n	‘fish’
(e)	ɔɔ	mélṣṣ	mélṣṣ = n	‘sugar cane’
(f)	uu	ōyúú	ōyúú = n	‘tooth brush’
(g)	a	ṭááḍḍa	ṭááḍḍa = n	‘grandmother’
(h)	ə	ōṇḍ	ōṇḍ = n	‘little girl’
(i)	ɔ	ḍnsḍ	ḍnsḍ = n	‘cooking plate’
(j)	u	kúfú	kúfū = n	‘crushed beans’
(k)	uə	būḍ	būḍ = n	‘tree type’
(l)	(g)	áṇé(g)	áṇé = n	‘elephant’

Consonant-final singular stems

In (32), the locative copular and dative clitic = $\tilde{A}n$ is attached to singular nouns with various stem-final consonants.

(32) **Locative and dative clitic = $\tilde{A}n$ on singular nouns with stem-final consonants**

Stem-final	N SG	LCM/DAT N SG	
bb	ʃílḍbb	ʃílḍbb = ɔn	‘water spring’
ḍ	māāḍ	māāḍ = ān	‘snake type’
d	dṣḍ	dṣḍ = ɔn	‘bird type’

Stem-final	N SG	LCM/DAT N SG	
ʃ	bìmiríʃ	bìmiríʃ = ʃn	‘bird type’
gg	kàmàlògg	kàmàlògg = ʃn	‘woman’
s	márʒʒs	márʒʒs = ʃn	‘spider’
m	ḍḍm	ḍḍm = ʃn	‘Arab’
n	séèn	séèn = ān	‘ruler’
ɲ	ɲéèɲ	ɲéèɲ = ān	‘spear type’
ŋ	mḍɲ	mḍɲ = ʃn	‘wild cat type’
r	púr	púr = ūn	‘flower’
l	ḍḍɲḍl	ḍḍɲḍl = ʃn	‘millipede’

Plural stems

In (33), the locative copular and dative clitic is attached to plural nouns with various plural suffixes.

(33) Locative and dative clitics on plural nouns

Suffix	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
-̄gg	wáár	wáār-g	wáár = ān	wáār-g = ān	‘insect’
-̄gg	wááyáá	wááyáá-gg	wááyáá = n	wááyáá-gg = ān	‘bird’
-̄gg	kúúfú	kúúfú-gg	kúúfú = n	kúúfú-gg = ūn	‘beans’
-Āgg	célḍ	célḍ-āgg	célḍ = ān	célḍ-āgg = ān	‘broom’
-ÉĒgg	púr	púr-îigg	púr = ūn	púr-îigg = ʃn	‘flower’
-ĀAgg	íl	íl-àəgg	íl = ʃn	íl-àəgg = ʃn	‘horn’
-ĀAḍ	kàmàlògg	kàmàlògg- àəḍ	kàmàlògg = ʃn	kàmàlògg- àəḍ = ān	‘woman’
-ḍ	ābbéé	ābbéé-ḍ	ābbéé = n	ābbéé-ḍ = ān	‘uncle’
-ḍ/-gg	gèrmù-ḍ	gèrmù-gg	gèrmù = ḍ = ūn	gèrmù-gg = ūn	‘insect’
-Eḍ/-gg	jínj-íḍ	jínj-g	jínj-íḍ = ʃn	jínj-g = ʃn	‘louse’

7.5.2 Locative copular and dative tonal morphology

The locative copular and dative clitics = $\bar{A}n$, = $\bar{V}n$ have underlying High-Mid tone, and the clitic = \bar{n} on vowel-final stems has underlying Mid tone.

Monosyllabic underlying approximant-final stems

In (34), locative copular and dative clitics are attached to nouns with the stem-final dental approximant δ and three tone melodies. Clitic High tone becomes Mid when attached to stem-final Low tone {M9}.

(34) **Locative/Dative clitic = $\bar{A}n$** **on stem-final δ nouns with three tone melodies**

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	jááð	jááð-āāgg	jááð = ān	jááð-āāgg = ān	‘old clothes’
M	mððð	mððð-ððð	mððð = ðn	mððð-ððð = ðn	‘grandfather’
L	yààð	yààð-āāð	yààð = ān	yààð-āāð = ān	‘sister’

In (35), the locative copula and dative clitic = $\bar{A}n$ is attached to monosyllabic approximant-final stems in which the final approximant can surface as a vowel or as an approximant. In either, the noun word tone melody is the same. High clitic tone lowers to Mid following stem-final Low tone in *bàà.w = ān* ‘father=LCM’. As in the copular and definite forms of such nouns with HL and ML stem tone melodies, the Low tone delinks and reassigns to the clitic, replacing the clitic tone, in contradiction of {M6}.

(35) **Locative/Dative clitic = $\bar{A}n$** **on monosyllabic approximant final stems with various tone melodies**

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	ááé	ááy-g	áá.ē = n	áá.y = ān	ááy-g = á ‘honey’
M	mūī	mūy-g	mū.ī = n	mū.y = ðn	mūy-g = ó ‘wildebeest’
L	bààð	bààw-āāð	bàà.ð = n	bàà.w = ān	bààw-āāð = á ‘father’
HL	káð	kāw-g	ká.ð = n	ká.w = àn	kāw-g = ā ‘hyena’
ML	ṵūūī	ṵūy-g	ṵūū.ī = n	ṵūū.y = ðn	ṵūy-g = ð ‘leopard’

Monosyllabic long vowel-final stems

In (36), the locative copular and dative clitic = $\bar{V}n$ is juxtaposed to monosyllabic long vowel-final stems. Clitic High tone again becomes Mid when attached to Low stem melodies {M9}. In HL and ML stem melodies, the final Low tone delinks and reassigns to the clitic, replacing the clitic tone, in contradiction of {M6}.

(36) **Locative/Dative clitic = $\bar{V}n$** **on monosyllabic long vowel final stems with various tone melodies**

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	cáá	cáá-gg	cáá. = ān	cáá-gg = ān	‘wild cat’
M	mīī	mīī-gg	mīī. = īn	mīī-gg = ðn	‘goat’
L	ḍīī	ḍīī-gg	ḍīī. = īn	ḍīī-gg = ðn	‘rat’
HL	máà	máà-gg	máá. = àn	máà-gg = ān	‘house’
ML	jīī	jīī-gg	jīī. = ìn	jīī-gg = ðn	‘turkey’
MH	mīí	mīí-gg	mīī. = īn	mīí-gg = ðn	‘chicken’

Polysyllabic vowel final stems

In (37), the locative copula and dative clitic = \bar{n} is attached to nouns with various

tone melodies and stem-final vowels. Clitic Mid tone assimilates to stem-final Low tone {M9}.

(37) **Locative/Dative clitic = \bar{n}**

on vowel-final singular nouns with various tone melodies

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	wááyáá	wááyáā-gg	wááyáā = n	wááyáā-gg = ān	‘bird type’
M	ūrīī	ūrīī-gg	ūrīī = n	ūrīī-gg = ōn	‘ostrich’
L	ònsò	ònsò-gg	ònsò = n	ònsò-gg = òn	‘cooking plate’
HL	órḑàà	órḑàà-gg	órḑàà = n	órḑàà-gg = ān	‘army’
HM	sáárfāā	sáárfāā-gg	sáárfāā = n	sáárfāā-gg = ān	‘rat’
ML	gṵṵḑḑḑ	gṵṵḑḑḑ-gg	gṵṵḑḑḑ = n	gṵṵḑḑḑ-gg = ōn	‘fish’
LM	mḑrāā	mḑrāā-gg	mḑrāā = n	mḑrāā-gg = ān	‘governor’
MH	pēēḑáá	pēēḑáā-gg	pēēḑáā = n	pēēḑáā-gg = ān	‘crack’

Consonant-final stems

In (38), the locative copular and dative clitic = $\bar{A}n$ is attached to nouns with various tone melodies and stem-final consonants. Clitic High tone becomes Mid when the clitic follows stem-final Low tone {M9}.

(38) **Locative/Dative clitic = $\bar{A}n$**

on consonant-final singular nouns with various tone melodies

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	wáár	wáār-g	wáár = ān	wáār-g = ān	‘insect type’
M	ḑṵm	ḑṵm-g	ḑṵm = ōn	ḑṵm-g = ōn	‘Arab’
L	kààm	kààm-g	kààm = ān	kààm-g = ān	‘cow type’
HL	séèn	séèn-g	séèn = ān	séèn-g = ān	‘ruler’
HM	jórgāāl	jórgāāl-g	jórgāāl = ān	jórgāāl-g = ān	‘bird type’
ML	kṵḑḑḑl	kṵḑḑḑl-g	kṵḑḑḑl = ān	kṵḑḑḑl-g = ān	‘baboon’
LH	àggáár	àggáār-g	àggáár = ān	àggáār-g = ān	‘hunter, rider’
LM	gḑēn	gḑēn-g	gḑēn = ān	gḑēn-g = ān	‘metal worker’
MH	bāár	bāár-g	bāár = ān	bāár-g = ān	‘tribe member’

7.6 Accompaniment

7.6.1 Accompaniment segmental morphology

As will be discussed in 11.1, the accompaniment clitic is used on nouns in adjuncts introduced by the preposition \bar{e} ‘with’ if the noun has the semantic role of accompaniment.

- (39) bāárg = á áǎǎ`n ànân è jǒgg gǒǒr = ē
 Baggara = DEF coming staying with people Goor = ACM
 ‘The Baggara were coming with the people of Goor.’ (Minj4)

The accompaniment clitic = $n\bar{E}$ is attached to stems with underlying-final approximant or final vowel. The clitic = \bar{E} is attached to consonant-final stems.

Table 19: Accompaniment clitics

Stem-final segment	ACM
(Monosyllabic) underlying approximant	= $n\bar{E}$
(Monosyllabic) long vowel	= $n\bar{E}$
(Polysyllabic) vowel	= $n\bar{E}$
Consonant	= \bar{E}

Monosyllabic underlying approximant final singular stems

In (40), the accompaniment clitic = $n\bar{E}$ is attached to singular nouns with stem-final dental approximant δ in (a-e) and to stems with underlying-final approximants w or y in (f-g). The clitic vowel takes the [ATR] quality of the root {M3}.

(40) **Accompaniment clitic = $n\bar{E}$ on singular nouns with stem-final δ**

	Stem-final	N SG	ACM N SG	
(a)	δ	jááǎ	jááǎ = $n\bar{e}$	‘old clothes’
(b)		mǒǒǎ	mǒǒǎ = $n\bar{i}$	‘grandfather’
(c)		mēēǎ	mēēǎ = $n\bar{e}$	‘tree type’
(d)		kūūǎ	kūūǎ = $n\bar{i}$	‘shadow’
(e)		yààǎ	yààǎ = $n\bar{e}$	‘sister’
(f)	ɔ /w/	bààǎ	bààǎ = $n\bar{e}$	‘father’
(g)	ε /y/	rāāē	rāāē = $n\bar{e}$	‘quarrel’

Vowel-final singular stems

In (41), the accompaniment clitic = $n\bar{E}$ is attached to singular nouns with various stem-final long and short vowels as in (a-j). The clitic also attaches to monosyllabic long vowel stems (k) and stems with underlying-final velar plosive g (m).

(41) **Accompaniment clitic = $n\bar{E}$ on singular nouns with stem-final vowels**

	Stem-final	N SG	ACM N SG	
(a)	εε	ābbéé	ābbéé = $n\bar{e}$	‘uncle’
(b)	ii	ūrīī	ūrīī = $n\bar{i}$	‘ostrich’
(c)	aa	wááyáá	wááyáá = $n\bar{e}$	‘bird type’
(d)	əə	gǒǒlǒǒ	gǒǒlǒǒ = $n\bar{i}$	‘fish’
(e)	ɔɔ	mélǒǒ	mélǒǒ = $n\bar{e}$	‘sugar cane’

	Stem-final	N SG	ACM N SG	
(f)	uu	ǝyúú	ǝyúú = nī	‘tooth brush’
(g)	a	ʈááðà	ʈááðà = nē	‘grandmother’
(h)	ə	ǝŋə	ǝŋə = nī	‘little girl’
(i)	ɔ	ðnsð	ðnsð = nē	‘cooking plate’
(j)	u	kúfú	kúfú = nī	‘crushed beans’
(k)	aa	cáá	cáá = nē	‘wild cat’
(l)	uə	būð	būð = nī	‘tree type’
(m)	(g)	áŋé(g)	áŋé = nē	‘elephant’

Consonant-final singular stems

In (42), the accompaniment clitic = \hat{E} is attached to singular nouns with various stem-final consonants.

(42) Accompaniment clitic = \hat{E} on singular nouns with stem-final consonants

Stem-final	N SG	ACM N SG	
bb	ʃíləbb	ʃíləbb = ī	‘water spring’
ɖ	māāɖ	māāɖ = ē	‘snake type’
d	dɔd	dɔd = ē	‘bird type’
ʈ	bìmiríʈ	bìmiríʈ = ī	‘bird type’
gg	kàmàləgg	kàmàləgg = ē	‘woman’
s	márɔ̄s	márɔ̄s = ē	‘spider’
m	ɖəm	ɖəm = ī	‘Arab’
n	séen	séen = ē	‘ruler’
ɲ	ɲéɲ	ɲéɲ = ē	‘spear type’
ŋ	məŋ	məŋ = ī	‘wild cat type’
r	púr	púr = ī	‘flower’
l	ɖəŋəl	ɖəŋəl = ē	‘millipede’

Plural stems

In (43), the accompaniment clitic = \hat{E} is attached to plural nouns with various plural suffixes. The singular nouns and singular accompaniment forms are given for comparison.

(43) Accompaniment clitic = \hat{E} on plural nouns

Suffix	N SG	N PL	ACM N SG	ACM N PL	
-gg	wáár	wáār-g	wáár = ē	wáār-g = ē	‘insect’
-gg	wááyáá	wááyáá-gg	wááyáá = nē	wááyáá-gg = ē	‘bird’
-gg	kúúfú	kúúfú-gg	kúúfú = nī	kúúfú-gg = ī	‘beans’
-Āgg	célɖ	célɖ-āgg	célɖ = ē	célɖ-āgg = ē	‘broom’
-ĒĒgg	púr	púr-īgg	púr = ī	púr-īgg = ī	‘flower’

Suffix	N SG	N PL	ACM N SG	ACM N PL	
- <u>AA</u> gg	íl	íl-ààgg	íl = ī	íl-ààgg = ī	‘horn’
- <u>AA</u> ḍ	kàmàlògg	kàmàlògg-ààḍ	kàmàlògg = ē	kàmàlògg-ààḍ = ē	‘woman’
- ḍ	ābbéé	ābbéé-ḍ	ābbéé = nē	ābbéé-ḍ = ē	‘uncle’
-ḍ/-gg	gèrmù-ḍ	gèrmù-gg	gèrmù-ḍ = ī	gèrmù-gg = ī	‘insect’
-Eḍ/-gg	jín-íḍ	jín-g	jín-íḍ = ī	jín-g = ī	‘louse’

7.6.2 Accompaniment tonal morphology

The accompaniment clitic = $n\bar{E}$ on approximant-final stems and vowel-final stems has underlying Mid tone. However, this clitic is an exception to the tone lowering rule {M9} of 3.4.3. The clitic = \bar{E} on consonant-final stems has underlying HM tone and is in accordance with {M9}.

Dental approximant δ final stems

In (44), Mid tone of the clitic = $n\bar{E}$ is not lowered following stem-final Low tone and thus {M9} is not applied to this suffix.

(44) **Accompaniment clitic = $n\bar{E}$
on stem-final δ nouns with three tone melodies**

Tone	N SG	N PL	ACM N SG	ACM N PL	
H	jááḍ	jááḍ-āagg	jááḍ = nē	jááḍ-āagg = ē	‘old clothes’
M	mṣṣḍ	mṣṣḍ-ṣṣḍ	mṣṣḍ = nī	mṣṣḍ-ṣṣḍ = ī	‘grandfather’
L	yààḍ	yààḍ-āaḍ	yààḍ = nē	yààḍ-āaḍ = ē	‘sister’

Vowel-final stems

In (45), the accompaniment clitic = $n\bar{E}$ is attached to nouns with stem-final vowels and various tone melodies. As in approximant-final stems, Mid tone of the clitic = $n\bar{E}$ is not lowered following stem-final Low tone.

(45) **Accompaniment clitic = $n\bar{E}$
on vowel-final singular nouns with various tone melodies**

Tone	N SG	N PL	ACM N SG	ACM N PL	
H	wááyáá	wááyáá-gg	wááyáá = nē	wááyáá-gg = ē	‘bird type’
M	ūrīi	ūrīi-gg	ūrīi = nī	ūrīi-gg = ī	‘ostrich’
L	ḍnsḍ	ḍnsḍ-gg	ḍnsḍ = nē	ḍnsḍ-gg = ē	‘cooking plate’
HL	órḍàà	órḍàà-gg	órḍàà = nē	órḍàà-gg = ē	‘army’
HM	sáárfāā	sáárfāā-gg	sáárfāā = nē	sáárfāā-gg = ē	‘rat’
ML	gṣūlḍḍḍ	gṣūlḍḍḍ-gg	gṣūlḍḍḍ = nī	gṣūlḍḍḍ-gg = ī	‘fish’
LM	mḍrāā	mḍrāā-gg	mḍrāā = nē	mḍrāā-gg = ē	‘governor’
MH	pēēḍáá	pēēḍáá-gg	pēēḍáá = nē	pēēḍáá-gg = ē	‘crack’

Consonant-final stems

In (46), the accompaniment clitic = \tilde{E} is attached to nouns with stem-final consonants and various tone melodies. High tone in the clitic becomes Mid when the clitic is attached to stem-final Low tone {M9}.

(46) **Accompaniment clitic = \tilde{E}**

on consonant-final singular nouns with various tone melodies

Tone	N SG	N PL	ACM N SG	ACM N PL	
H	wáár	wáár-g	wáár = \tilde{e}	wáár-g = \tilde{e}	‘insect type’
M	ḍōm	ḍōm-g	ḍōm = $\tilde{1}$	ḍōm-g = $\tilde{1}$	‘Arab’
L	kààm	kààm-g	kààm = \tilde{e}	kààm-g = \tilde{e}	‘cow type’
HL	séèn	séèn-g	séèn = \tilde{e}	séèn-g = \tilde{e}	‘ruler’
HM	ǰórgāāl	ǰórgāāl-g	ǰórgāāl = \tilde{e}	ǰórgāāl-g = \tilde{e}	‘bird type’
ML	kōḍèl	kōḍèl-g	kōḍèl = \tilde{e}	kōḍèl-g = \tilde{e}	‘baboon’
LH	àggáár	àggáár-g	àggáár = \tilde{e}	àggáár-g = \tilde{e}	‘hunter, rider’
LM	gḍēn	gḍēn-g	gḍēn = \tilde{e}	gḍēn-g = \tilde{e}	‘metal worker’
MH	bāár	bāár-g	bāár = \tilde{e}	bāár-g = \tilde{e}	‘tribe member’

As discussed in section 2.4, no more than one tone is assigned on short, open syllables in roots. Although the short, open syllable clitic = \tilde{E} allows two tones to be assigned, there is commonly some alternation.

When the accompaniment clitic is attached to stems with final Mid tone, the High of the High-Mid clitic = \tilde{E} is lowered to a pitch half-way between High and Mid tone before falling to Mid tone. The quick ‘half’ High-Mid falling tone sounds like a strong Mid tone syllable, and is different to speakers and hearers than the regular Mid tone.

When the accompaniment clitic = \tilde{E} is attached to stems with final High tone, the High of the High-Mid clitic is sometimes unassigned so that the surface tone of the clitic vowel is only Mid tone. At other times, the Mid of the High-Mid clitic is unassigned so that the surface tone of the clitic vowel is only High tone. Still, at other times, both tones surface on the clitic vowel. These alternations differ for the same nouns for the same speakers, depending on the quickness of speech, rather than because of phonological features of the stem segments. The slower the noun form is spoken, the more likely that both tones will be uttered.

7.7 Subordinate clause-final clitic

In subordinate clauses such as those beginning with the subordinate conjunction \acute{e} *gārá* ‘when’, the clitic = \tilde{E} attaches to the clause-final word. The marker = \tilde{E} attaches to the subordinate clause of (47a), beginning with the conjunction \acute{e} *gārá*

‘when’, and to the subordinate clause ∂ *gàð-sā gùrūs = f* ‘and when a person gave money,’ of (b), having the same function but without the subordinate conjunction.

- (47a) \acute{e} *gārā* *kās-s = i* *ūfú-n = í*, \bar{e} *dōs*
 GP when struck-COMP = SBO1 tree-DEF = SBO 3sN start
 ‘When she struck the tree, she began . . .’ (Nyee14)

- (b) $b\bar{e}\bar{e}l$ *mān* *tā-án* *tù* ∂ *gàð-sā* *gùrūs = í*
 metal certain was there and give-COMP money = SBO (Ar)
 ‘There was a certain metal token, and when (a person) gave money,

\bar{e} *gāf = ūn = i* *q-ōs*.
 3sN give = 2sD = 3sAM in-hand. 2sPs
 he gave it to you as certificate of payment (lit. in your hand)’ (Fand8-9)

The subordinate clause-final clitic = \acute{E} (SBO) should not be confused with the subordinate verb-final clitics (SBO1, SBO2) of 10.7. In (47a), the clitic = \check{y} (SBO1) attaches to the verb *kās-s = y* ‘struck = COMP = SBO1’ in addition to the clause-final clitic = \acute{E} (SBO) and is a different morpheme.

Subordinate clauses are further discussed in section 15.2 on conjunctions. In 15.3 it will be shown that the subordinate clause-final clitic attaches to interrogative clauses in which the interrogative pronoun is pre-verbal. As shown in (23) of 4.1.11, subordinate clauses can contain relative clauses. In 14.7 the difference between subordinate clauses and relative clauses is discussed.

The subordinate clause clitic = \acute{E} attaches to singular and plural nouns with stem-final consonants and the clitic = $n\acute{E}$ attaches to stem-final vowels.

Table 20: Subordinate clause clitic

Stem-final segment	SBO N SG	SBO N PL
Vowel	= $n\acute{E}$	
Consonant	= \acute{E}	= \acute{E}

In (48), the clitic = $n\acute{E}$ attaches to vowel-final noun stems with various root tone melodies. Subordinate clitic High tone lowers to Mid following stem-final Low tone {M9}.

(48) **Subordinate clause clitic = $n\acute{E}$ attached to vowel-final noun stems**

Tone	N SG	N PL	SBO N SG	SBO N PL	
H	$t\acute{s}\acute{s}$	$t\acute{s}$ -gg	$t\acute{s}\acute{s} = n\acute{e}$	$t\acute{s}$ -gg = \acute{e}	‘cow’
M	$m\bar{i}\bar{i}$	$m\bar{i}\bar{i}$ -gg	$m\bar{i}\bar{i} = n\acute{i}$	$m\bar{i}\bar{i}$ -gg = \acute{i}	‘goat’
L	$q\bar{i}\bar{i}$	$q\bar{i}\bar{i}$ -gg	$q\bar{i}\bar{i} = n\bar{i}$	$q\bar{i}\bar{i}$ -gg = \bar{i}	‘rat’
HL	$w\acute{r}\bar{i}$	$w\acute{r}\bar{i}\bar{i}$ -gg	$w\acute{r}\bar{i} = n\bar{i}$	$w\acute{r}\bar{i}\bar{i}$ -gg = \bar{i}	‘bird’

HM	cééṣ	cééṣ-gg	cééṣ = né	cééṣ-gg = é	‘cripple’
ML	ṇūūì	ṇūūì-gg	ṇūūì = nī	ṇūūì-gg = ī	‘leopard’
LM	mòràā	mòràā-gg	mòràā = né	mòràā-gg = é	‘governor’
MH	kāsá	kāsā-gg	kāsá = né	kāsā-gg = é	‘boy’

In (49), the clitic =É attaches to consonant-final noun stems with various root tone melodies. Subordinate clitic High tone again lowers to Mid following stem-final Low tone {M9}.

(49) **Subordinate clause clitic =É attached to consonant-final noun stems**

Tone	N SG	N PL	SBO N SG	SBO N PL	
H	kálíḍ	kálí-ìgg	kálíḍ = í	kálí-ìgg = í	‘bird’
M	ṭēḍēl	ṭēḍēl-g	ṭēḍēl = é	ṭēḍēl-g = é	‘bird’
L	dàìḍ	dàìḍ-àgg	dàìḍ = ī	dàìḍ-àgg = ī	‘scorpion’
HL	ósàr	ósàr-g	ósàr = ī	ósàr-g = ī	‘army’
HM	márṵṵs	márṵṵs-ṵgg	márṵṵs = é	márṵṵs-ṵgg = é	‘spider’
ML	gōmūūr	gōmūūr-ìgg	gōmūūr = ī	gōmūūr-ìgg = ī	‘dove’
LH	àggáár	àggáár-g	àggáár = é	àggáár-g = é	‘hunter’
LM	gèṇīī-ḍ	gèṇīī-g	gèṇīī-ḍ = í	gèṇīī-g = í	‘bird’
MH	tēṇḍás	tēṇḍás-àgg	tēṇḍás = é	tēṇḍás-àgg = é	‘bird’

8 Adjectives

As discussed in 4.3, adjectives are analyzed as a distinct lexical category from either nouns or verbs since they are not used in some of the syntactic constructions of either nouns or verbs, and there are differences in the morphology from either category. Adjectives are generally not attested (NA) in use as subjects, objects, or objects of prepositions. As will be discussed in 8.3, there are three differences in the stem morphology of nouns and adjectives with final consonants. In verb paradigms, the long forms of subject pronouns precede the adjectival verb instead of short subject pronouns as in true verbs. The plural adjective suffix *-gg* and copular clitic *=A* attach to adjectival verbs of plural persons, whereas these bound morphemes are not attached to any true verb forms. These and other details specifying the difference between adjectives and nouns and verbs are found in 4.3.

Adjective types are discussed in 8.1, stem morphology of qualitative adjectives in 8.2, and word morphology of qualitative adjectives in 8.3.

8.1 Adjective types

Numerals (8.1.1), quantitative adjectives (8.1.2), demonstratives (8.1.3) and qualitative adjectives (8.1.4) immediately follow nouns in noun phrases and specify some property of the nouns they follow. Thus, all of these can be analyzed categorically as adjectives. Nevertheless, there are some differences.

Demonstratives and qualitative adjectives agree in number with the nouns they modify, whereas numerals and quantitative adjectives do not. Rather, numerals and quantitative adjectives have different lexemes depending on whether the nouns they modify are singular or plural. Only the morphology of qualitative adjectives is similar to that of nouns. For further discussion of adjectives in noun phrases, see 14.9.2.

8.1.1 Numerals

The numeral *tāmán* ‘one’ is used with singular nouns. All other cardinal numbers are used with plural nouns.

- (1a) ār ú=bìli ʃǝgg kǎē wá, bēl ʃēn **tāmán**
 hey 2pN=hit people all not hit person one
 ‘Don’t kill all the people; just kill the one man.’ (Fand29)

- (b) ʃǎfārì=n é mǎnē ʃǝ ɖàð-sǎ càðr-ēēgg=á **yǝǝsǎ**
 Jafari=DEF alone just killed rabbits-PL=DEF four
 Jafari, by himself, killed four rabbits. (Jafr7)

Gaahmg numerals draw upon words for hands, feet, and eyes. Hands and feet are representative of the number of fingers and toes that they contain. The numeral *áás-áámán* ‘five (hand-one)’ is based on the five fingers of one hand. The numeral *ídíg-dáāgg* ‘seven (eyes-two)’ is based on the two eyes—apparently in addition to the five fingers of one hand which are not included in the numeral. The numeral *ásēg-dí* ‘ten (hands-also)’ is based on the ten fingers of two hands. The numeral *ǰāā dùì ǰǎǎ* ‘twenty (person black body)’ is based on all the fingers and toes of a black person’s body. It is interesting that the word *dùì* ‘black’ is included in the construction of the numeral, although having nothing to do with the numeral itself. The numerals ‘forty’, ‘sixty’, and higher multiples of twenty are ‘two bodies’, ‘three bodies’ etc.

(2) **Numerals (cardinal numbers)**

<i>ṭāmán</i>	1	
<i>ḍáāgg</i>	2	
<i>ǰǎǎ</i>	3	
<i>yǎǎsǎ</i>	4	
<i>áás-áámán</i>	5	(hand.1sPs-one)
<i>ṭáḍḍigg</i>	6	
<i>ídíg-dáāgg</i>	7	(eye.3sPp-two)
<i>ídigg-ǰǎǎ</i>	8	(eye.3sPp-three)
<i>ídíg-yǎǎsǎ</i>	9	(eye.3sPp-four)
<i>ásēg-dí</i>	10	(hand.3sPp-also)
<i>ásēgdí ì ná ṭāmán</i>	11	(ten with REL one)
<i>ásēgdí ì ná ḍáāgg</i>	12	(ten with REL two)
<i>ǰāā dùì ǰǎǎ</i>	20	(person black body)
<i>ǰāā dùì ǰǎǎ ì ná ṭāmán</i>	21	(twenty with REL one)
<i>ǰāā dùì ǰǎǎ ì ná ḍáāgg</i>	22	(twenty with REL two)
<i>ǰāā dùì ǰǎǎ ì ná ásēgdí</i>	30	(twenty with REL ten)
<i>ǰǎǎ dùìgg ìṅ-ǎ ḍáāgg</i>	40	(people black body.PL-DEF two)
<i>ǰǎǎ dùìgg ìṅ-ǎ ḍáāgg ì ná ásēgdí</i>	50	(forty with REL ten)
<i>ǰǎǎ dùìgg ìṅ-ǎ ǰǎǎ</i>	60	(people black body.PL-DEF three)
<i>ǰǎǎ dùìgg ìṅ-ǎ ǰǎǎ ì ná ásēgdí</i>	70	(sixty with REL ten)
<i>ǰǎǎ dùìgg ìṅ-ǎ yǎǎsǎ</i>	80	(people black body.PL-DEF four)
<i>ǰǎǎ dùìgg ìṅ-ǎ yǎǎsǎ ì ná ásēgdí</i>	90	(eighty with REL ten)
<i>ǰǎǎ dùìgg ìṅ-ǎ áásáámán</i>	100	(people black body.PL-DEF five)
<i>ǰǎǎ dùìgg ìṅ-ǎ ásēgdí</i>	200	(people black body.PL-DEF ten)

Ordinal numbers are constructed with cardinal numbers in relative clauses used as modifiers of the head noun. However, the numerals *mǎǎgg* and *yààn* are used for ‘first’ and ‘second’ instead of *ṭāmán* ‘one’ and *ḍáāgg* ‘two’.

- (3a) d̀ù-d̀ = ū ná m̃ḡḡg = ē wēdán
 year-SG = DEF REL first = REL good.SG
 ‘The first year is good.’
- (b) d̀ù-gg = ū nà ṡḡ = ē wíḡ-gg = à
 year-PL = DEF REL.PL first = RDM good-PL = COP
 ‘The third year is good.’

(4) **Ordinal numbers**

m̃ḡḡg-ē	‘first’
yààn-è	‘second’
ṡḡ-ē	‘third’
yḡṡs-î	‘fourth’
āāsāāmân-ì	‘fifth’
tólḡḡ-ì	‘sixth’
íḡḡḡḡḡg-è	‘seventh’
íḡḡḡḡḡ-è	‘eighth’
íḡḡyḡṡs-î	‘ninth’
ṡsḡḡ-î	‘tenth’
ṡsḡḡí ì ná tāmân-ē	‘eleventh’
ṡsḡḡí ì ná ḡḡḡg-è	‘twelfth’

8.1.2 Quantitative adjectives

Indefinite adjectives and quantitative adjectives can be grouped into the same semantic and syntactic category. There are different indefinite adjectives depending on whether the nouns they follow and modify are singular or plural.

- (5) Mī **mān** nāmânē é ūlg-ì mânḡ wá.
 goat certain beaten GP thirst.GEN-3sP well not
 There was once a very thirsty goat. (Goat1)

Singular and plural referents can have differing or the same root forms. The cardinal number ‘one’ *tāmân* could be derived from *mān* ‘any, certain’.

(6) **Indefinite adjectives**

Singular		Plural	
mān	‘any, certain’	bīgg	‘certain’
dāàn, yāàn	‘different, another’	dāàn-àḡḡ	‘others’

There are also different quantitative adjectives depending on whether the nouns they follow and modify are singular or plural.

- (7a) mǎĩḍ kũũḍ = ũ ḍǎḍ-sǎ jèèḿ **ḍéé** wá
 old.man person.name = DEF kill-COMP thing any not
 ‘The old man of Kuud didn’t kill anything.’ (Jafr8)
- (b) é gǎrá ḍǎḍ-s = ǐ īgg = ǎ = r **kāy** = é
 GP when milk-COMP = SBO1 milk = DEF = PF all = SBO
 ‘When all the milk was completely milked, . .’ (Nyee25)
- (c) é ḍḍj-ɹ āāggǎ é mīḍ-ǎg **fǎrój** wá bǎ = ǐ
 3sN /ḍḍj/stone-INF 1pA GP stone-PL few not oh = SBO
 ‘When it pelted us with a lot of stones, . .’ (Thng20)
- (d) á bās-sǎ ǎgg **tǎlg**
 1sN throw-COMP time many
 ‘I threw many times.’

Singular and plural referents of quantitative adjectives have differing root forms. There is no attested singular counterpart of *fǎrógg* ‘few’.

(8) **Quantitative adjectives**

Singular		Plural
ḍéé	‘any’	kāē
bum	‘much’	tǎlg
----		fǎrógg

8.1.3 Demonstratives

Demonstratives follow and agree in number with the nouns they modify. They are not used pronominally. High tone on the initial syllable marks agreement with a singular noun and Low tone marks agreement with a plural noun.

(9) **Demonstratives**

- (a) bǐi fǐḡǎ-ḍǎ kǎr ǎḍn **níí** mā māḡ
 let hear word 1sPs this very carefully
 ‘Listen carefully to what I am saying (lit. this my word)!’ (Womn3)
- (b) ágg fēssā ḍḍ-gg = ũ **nèè** kāē
 1pN grazed year-PL=DEF **these** all
 ‘We grazed (cows) all these years.’
- (c) ú tǎlḍǎn = ǐ tǎ-gg = ǎ gār-g = ā **nààḍi** kāē jínínḍ
 2sN putting=them cow-PL=DEF place-PL=DEF **those** all why
 ‘Why were you putting all those cows into a certain place?’

The three-way distinction is for near a speaker, near an addressee, and away from both speaker and addressee. The singular and plural demonstratives *náá(n)* ‘that’ *nàà(n)* ‘those’ optionally have a final segment *n*.

(10) **Demonstratives**

DEM SG		DEM PL		
níí, néé	‘this’	nèè	‘these’	near speaker
náá(n)	‘that’	nàà(n)	‘those’	near addressee
náádī	‘that’	nàādī	‘those’	away from both

The same three-way distinction is present in demonstrative locative adverbs which can be in short or long form.

- (11) gəl Fónḍi bəg-s = ʒn = ɪn líɸɪ é kəɾtūm t̪e.
 just Fandi catch-COMP = PAS = 3pD arrived GP Khartoum here
 Fandi was captured by them (government officials),
 and brought here to Khartoum. (Fand6)

(12) **Demonstrative locative adverbs**

Long	Short		
t̪ɛɛðé	t̪ɛ	‘here’	near speaker
t̪ààḍá	t̪à	‘there’	near addressee
t̪iḍí	t̪i	‘there’	away from both

8.1.4 Qualitative adjectives

Qualitative adjectives, including adjectives of colour, also follow and agree in number with the noun they modify, as shown by the examples of (13).

- (13a) á nām j̪ɛr b̪ɔr
 1sN want sorghum yellow
 ‘I want yellow sorghum.’
- (b) á nām j̪ɛr-g b̪ɔr-g
 1sN want sorghum-PL yellow-PL
 ‘I want yellow types of sorghums.’

Gaahmg has five colour distinctions.

(14) **Colour adjectives**

ADJ SG		ADJ PL		
j̪āā	ḍùì	j̪ōgg	ḍùì-gg	‘black person’
léél	náār	léél-g	náār-g	‘green grass’
j̪íí-ḍ	póḍ	j̪íí-gg	póḍ-g	‘white tooth’
áfá-ḍ	bèrà	áfá-āgg	bèrà-gg	‘red blood’
j̪ɛr	b̪ɔr	j̪ɛr-g	b̪ɔr-g	‘yellow sorghum’

The examples of (15) are representative of other qualitative adjectives.

(15) **Qualitative adjectives**

ADJ SG		ADJ PL		
gāār	cúú	gàār-èègg	cúú-gg	‘sweet pork’
wéé	bér	wís-ǽg	bér-g	‘clean house’
kòlèèð	îi	kòlèèð-g	îi-gg	‘heavy sword’
jēn	bándāl	jōg	bándāl-g	‘weak person’
kágðār	áè	kágðār-g	áy-g	‘sour food’
tśś	kśśfār	tś-g	kśśfār-g	‘thin cow’
kàmàlògg	kāyáār	kàmàlògg-ààḍ	kāyáār-g	‘beautiful girl’
ḍāl	lūsú	ḍāl-g	lūsú-gg	‘hot cooking pot’
ḍèèl	gààl	ḍèèl-èègg	gààl-g	‘distant lake’
ṭààð	kár	ṭààð-g	kár-g	‘loose door’
sáá	ón	sá-gg	ón-g	‘bad wine’
sáàð	yáá	sááw-èègg	yáá-gg	‘new grass-cutter’
māāð	fūūi	māāw-èègg	fūūy-g	‘male gazelle’
páré	sāmāār	páré-ēgg	sāmāār-g	‘rough leather bag’
páré	bāāl	páré-ēgg	bāāl-g	‘striped bag’
əŋð	ḍəmā	əŋ-g	ḍəmā-gg	‘blind girl’
jēn	céé	jōgg	céé-gg	‘unavailable person’
būúl	káé	būúl-g	kāy-g	‘finished bread’
jāā	ḍúsú	jāālgé	ḍúsú-gg	‘ignorant boy’
mḍsòr	bûr	mḍsòr-èèg	bûr-g	‘remaining horse’
jāā	dəŋnār	jōgg	dəŋnār-g	‘stuttering boy’

8.2 Qualitative adjective stem morphology

Word structure of qualitative adjectives can be ordered according to the schemes of (16). As in nouns, the adjective stem consists of the root and an optional plural suffix. The adjective word consists of the stem and optional slots for copula, definite, locative, dative, accompaniment, subordinate, and relative definite clause marker clitics.

- (16) Adjective stem = root + (PL marker)
 Adjective word = [ADJ stem] + ({COP, DEF, LCM, DAT, ACM, SBO, RDM})

Plural formation of qualitative adjectives is similar to that of nouns in that adjective roots attach the segmental suffix -gg with more than one tonal allomorph.

8.2.1 Segmental plural formation of adjectives

Plural formation of adjectives nearly always involves attaching the suffix -gg in the plural form. As in nouns, the suffix attaches to root-final sonorants and vowels.

Table 21: Adjective Plural Formation

Suffix	Root-final segment	ADJ SG	ADJ PL		Number
-gg	sonorant	dómɔl	dómɔl-g	‘big’	20
	vowel	yáá	yáá-gg	‘new’	10

The plural suffix -gg is attested to attach to root-final *r*, *l*, *n*, and *y*.

(17) **Plural adjective suffix -gg**

UR-final	ADJ SG	ADJ PL	
/r/	kár	kár-g	‘loose’
/l/	dómɔl	dómɔl-g	‘big’
/n/	ón	ón-g	‘bad’
/y/	âè	ây-g	‘sour’
/y/	fũù	fũùy-g	‘male’

The plural suffix -gg is also attested to attach to root-final short and long vowels.

(18) **Plural adjective suffix -gg**

UR-final	ADJ SG	ADJ PL	
/ə/	ḍəmḍ	ḍəmḍ-gg	‘blind’
/u/	lūsú	lūsú-gg	‘hot’
/i/	wílí	wílí-gg	‘reflective’
/a/	yáá	yáá-gg	‘new’
/ə/	bósó	bósó-gg	‘acidic’
/u/	cúú	cúú-gg	‘sweet’
/ɛ/	céé	céé-gg	‘unavailable’
/i/	î	î-gg	‘heavy’

Only the adjectives of (19) have been attested with other suffixes and are analyzed as having irregular plural formation.

(19) **Irregular plural adjective formation**

ADJ SG	ADJ PL	
pārrās	pōrs-īgg	‘full plate’
dāàn	dāān-ààg	‘another chicken’
kàráább	kàráá-ōgg	‘troublesome boy’
wēḍá	wíḍ-gg	‘good, beautiful’
mūús	mūūs-ós	‘even, equal’
nāán	nālgéégg	‘small, young’
fāā	fāng	‘old’
mādā	māng	‘big’

8.2.2 Tonal plural formation of adjectives

The following tone melodies have been attested in adjectives.

(20) **Tone melodies in adjectives**

Root tone	ADJ SG	ADJ PL	
H	báár	báár-g	‘weak’
M	lōwō	lōwō-gg	‘round, circular’
L	gààl	gààl-g	‘distant, far’
HL	bûr	bûr-g	‘remaining’
HM	ɲáār	ɲáār-g	‘green’
ML	bāàl	bāàl-g	‘striped, coloured’
MH	mūús	mūús-ós	‘even, equal’
LM	sèggār	sèggār-g	‘strong’
LH	kàráabb	kàráá-ōgg	‘troublesome’
HMH	wílí	wílí-gg	‘reflective mirror’

As shown by the contrasts of (21), there are two tonal allomorphs of the segmental suffix *-gg*, one with no underlying tone and one with Mid tone.

(21) **Tone melodies in adjectives**

Suffix	ADJ SG	ADJ PL	
-gg	báár	báár-g	‘weak’
-gg	kāyáár	kāyáār-g	‘beautiful’
-gg	yáá	yáá-gg	‘new’
-gg	céé	céé-gg	‘unavailable’

8.3 Qualitative adjective clitic morphology

Most clitic allomorphs attaching to nouns with various stem-final segments and number have the same form when attaching to adjectives of the same stem-final segments and number. There are three exceptions attested: the copular clitic = \bar{A} attaches to consonant-final singular nouns, whereas there is no copular marking on consonant-final singular adjectives; the definite clitic = Vn with no underlying tone attaches to monosyllabic long vowel-final nouns, whereas the definite clitic = $\acute{V}n$ with High tone attaches to monosyllabic long vowel-final adjectives; the definite clitic = \acute{A} with High tone attaches to plural nouns, whereas the definite clitic = \grave{A} with Low tone attaches to plural adjectives.

Table 22 lists the various clitics on stem-final segments and (22) gives example adjectives with the same order. Three combinations of clitics are included: the relative clause dative (RDTM)/ relative clause locative copula (RDCM), the relative clause definite and accompaniment (RDM=ACM), and relative clause definite and subordinate (RDM=SBO). Clitics on adjectives with certain stem-final segments

which have not been attested are left blank.

Table 22: Adjective word clitic allophones

Stem-final segment	COP	DEF	RDM	DAT/LCM	RDTM/RLCM
(Monosyllabic)vowel/approx.		= Ṽn	= É		
(polysyllabic) vowel	= n̄	= n	= É	= n̄	= ÉĒn
Consonant	---	= Á	= É	= Ān	= ÉĒn
Consonant Noun PL	= À	= Ā	= È	= Ān	= ÈĒn

Stem-final segment	ACM	RDM=ACM	SBO	RDM=SBO
(polysyllabic) vowel	= nĒ	ÉÉ = nĒ	= nĒ	ÉÉ = nĒ
Consonant	= Ē	ÉÉ = nĒ	= Ē	ÉÉ = nĒ
Consonant Noun PL	= Ē̄	ÈÈ = nĒ	= Ē	ÈÈ = nĒ

(22a) **Adjective word clitic allomorphs on various stem-final adjectives**

ADJ	COP	DEF	RDM	
î		î. = ín	î. = ĩ	‘heavy’
ḍəmṣ	ḍəmṣ = n	ḍəmṣ = n	ḍəmṣ. = í	‘blind’
kāyáár	kāyáár	kāyáár = á	kāyáár = é	‘beautiful’
kāyáār-g	kāyáār-g = à	kāyáār-g = à	kāyáār-g = è	‘beautiful-PL’

(b) **Adjective word clitic allomorphs on various stem-final adjectives**

ADJ	DAT/LCM	RDTM/RLCM	ACM	
ḍəmṣ	ḍəmṣ = n	ḍəmṣ. = ĩn	ḍəmṣ = nĒ	‘blind’
kāyáár	kāyáár = ān	kāyáár = éĒn	kāyáár = Ē	‘beautiful’
kāyáār-g	kāyáār-g = ān	kāyáār-g = èĒn	kāyáār-g = Ē̄	‘beautiful-PL’

(c) **Adjective word clitic allomorphs on various stem-final adjectives**

ADJ	RDM=ACM	SBO	RDM=SBO	
ḍəmṣ	ḍəmṣ. = íí = nĪ	ḍəmṣ = ní	ḍəmṣ. = íí = ní	‘blind’
kāyáár	kāyáár = éé = nĒ	kāyáár = é	kāyáár = éé = nĒ	‘beautiful’
kāyáār-g	kāyáār-g = èè = nĒ̄	kāyáār-g = é̄	kāyáār-g = èè = nĒ̄	‘beautiful-PL’

Not enough adjective data was collected to make sure that the copula = **n̄** and accompaniment = **nĒ** clitics attached to stem-final vowels do not follow the tone lowering rule of {M9} in 3.4.3 as in nouns, but presumably this is the case.

8.3.1 Copular clitic

Copular clitics attach to adjectives. In the adjective non-verbal clauses of (23), the copular markers agree in number with the adjective to which they attach.

- (23a) t̥s̥s̥ s̥ɛggār (b) t̥s̥-gg s̥ɛggār-g = à̃
 cow strong cow-PL strong-PL = COP
 ‘A cow is strong.’ ‘Cows are strong.’
- (c) t̥s̥s̥ = n ð̣əṃ = n
 cow = DEF blind = COP
 ‘The cow is blind.’

The clitic = \bar{n} attaches to polysyllabic vowel-final singular adjectives as in (23c), and the clitic = \bar{A} attaches to plural adjectives as in (b), the same as in nouns with these stem-final segments. However unlike consonant-final singular nouns which attach the copular clitic = \bar{A} , consonant-final singular adjectives are unmarked by any copular clitic, as shown in (a).

Table 23: Copular clitics on adjectives

Stem-final segment	COP ADJ SG	COP ADJ PL
(Polysyllabic) vowel	= \bar{n}	
Consonant	---	= \bar{A}

The copular clitic = n attaches to vowel-final singular adjectives and consonant-final singular adjectives are unmarked by any copular clitic.

(24) **Copular clitics on singular adjectives**

Stem-final	ADJ SG	COP ADJ SG	
Vowel	ð̣əṃ	ð̣əṃ = n	‘blind’
Consonant	n̥áán	n̥áán	‘young’

Stem-final HM tone becomes HL when followed by a copular clitic with Low tone {M7}.

(25) **Copular clitic = \bar{A} on adjectives with various stem tone melodies**

Stem-final	ADJ SG	ADJ PL	COP ADJ SG	COP ADJ PL	
H	bér	bér-g	bér	bér-g = à̃	‘clean’
M	bánḑāl	bánḑāl-g	bánḑāl	bánḑāl-g = à̃	‘weak’
L	kóóḑār	kóóḑār-g	kóóḑār	kóóḑār-g = à̃	‘thin’
H/HM	kāyáár	kāyáār-g	kāyáár	kāyáār-g = à̃	‘beautiful’

8.3.2 Definite clitic

The definite clitic attaches to adjectives and agrees in number with the noun phrase head.

- (26a) ɬɔ́ɔ́ d̥əm̩ = **n** nāām (b) ɬɔ́-gg s̩ɛggār-g = **à** nāām
 cow weak = DEF eating cow-PL weak-PL = DEF eating
 ‘The blind cow is eating.’ ‘The weak cows are eating.’

In singular noun phrases with a head noun and adjective modifier, the definite clitic attaches to the adjective unless it is consonant-final and the noun is vowel-final.

(27) **Definite clitic on singular nouns and adjectives**

N-final	ADJ-final	DEF SG NP	
V = DEF	C = (DEF)	wéé = n	bér = (á) ‘the clean house’
C	V = DEF	kòlèèð	î = ín ‘the heavy sword’
C	C = DEF	j̥ɛn	bándāl = á ‘the weak person’
V	V = DEF	bààð	fāā = n ‘the old father’

In plural noun phrases with a head noun and adjective modifier, the definite clitic attaches to the adjective and optionally to the head noun.

(28) **Definite clitic on plural nouns and adjectives**

N-final	ADJ-final	DEF PL NP	
C-PL = (DEF)	C-PL = DEF	wís-ðg = (ð)	bér-g = à ‘the clean houses’
C-PL = (DEF)	C-PL = DEF	kòlèèð-g = (ð)	î-g = ð ‘the heavy swords’
C-PL = (DEF)	C-PL = DEF	j̥ðgg = (ð)	bándāl-g = à ‘the weak persons’
C-PL = (DEF)	C-PL = DEF	bààw-āāð = (á)	fāng = à ‘the old fathers’

As with definite clitics on nouns, definite clitics on adjectives differ depending on the stem-final segment. Polysyllabic vowel-final adjectives attach the definite clitic = *n* with no underlying tone and consonant final singular adjectives attach the definite clitic = *á* with High tone, the same as in nouns with these types of final segments. However, two of the definite clitics attaching to adjectives differ from the clitics attaching to nouns with the same final segments. Monosyllabic vowel-final nouns attach the definite clitic = *Vn* with no underlying tone, but monosyllabic vowel-final adjectives attach the definite clitic = *V̇n* with High tone. Plural nouns attach the definite clitic = *á* with High tone, but plural adjectives attach the definite clitic = *à* with Low tone.

Table 24: Definite clitics on adjectives

Stem-final segment	DEF ADJ SG	DEF ADJ PL
(Monosyllabic) long vowel or underlying approximant	= <i>V̇n</i>	
(Polysyllabic) vowel	= <i>n</i>	
Consonant	= <i>á</i>	= <i>à</i>

Monosyllabic long vowel and underlying approximant-final adjectives attach the definite clitic = $\check{V}n$ with High tone. In $dù.$ = \check{in} ‘black’, High suffix tone lowers to Mid following Low root tone {M9}. In $\tilde{i}.$ = \check{in} ‘heavy’ and $\acute{a}.$ = \check{en} ‘sour’, the underlying HLH tone results as HMM tone in accordance with rule {M10}, although in verbs, the rule only applies when the three tones are assigned to the same syllable.

(29) **Definite clitic = $\check{V}n$ on monosyllabic singular adjectives**

Stem-final	ADJ SG	DEF ADJ SG	
/a/	yáá	yáá. = á \check{n}	‘new’
/ə/	báá	báá. = á \check{n}	‘acidic’
/u/	cúú	cúú. = ú \check{n}	‘sweet’
/ɛ/	céé	céé. = é \check{n}	‘unavailable’
/i/	î	î. = í \check{n}	‘heavy’
/y/	áè	á. = é \check{n}	‘sour’
/y/	dùì	dù. = ì \check{n}	‘black’

Polysyllabic vowel-final adjectives attach the definite clitic = n with no underlying tone.

(30) **Definite clitic = n on polysyllabic vowel final singular adjectives**

Stem-final	ADJ SG	DEF ADJ SG	
/a/	māḍā	māḍā = n	‘big’
/ə/	dēmā	dēmā = n	‘blind’
/u/	lūsú	lūsú = n	‘hot’
/i/	wílí	wílí = n	‘reflective’

Consonant-final singular adjectives attach the definite clitic = \acute{A} .

(31) **Definite clitic = \acute{A} on consonant final singular adjectives**

Stem-final	ADJ SG	DEF ADJ SG	
/r/	kár	kár = á	‘loose’
/l/	dómāl	dómāl = á	‘big’
/n/	ón	ón = á	‘bad’

Consonant-final adjectives attach the definite clitic = \acute{A} with High tone and plural adjectives attach the definite clitic = \acute{A} with Low tone. Clitic High tone lowers to Mid following stem-final Low tone {M9} and the Mid of stem-final HM tone

(32) **Definite clitic = \acute{A} on singular adjectives and = \acute{A} on plural adjectives**

Stem-final	ADJ SG	ADJ PL	DEF ADJ SG	DEF ADJ PL	
H	bér	bér-g	bér = á	bér-g = à	‘clean’
M	bánḍāl	bánḍāl-g	bánḍāl = á	bánḍāl-g = à	‘weak’
L	kóófār	kóófār-g	kóófār = ā	kóófār-g = à	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = á	kāyáár-g = à	‘beautiful’

assimilates to clitic Low tone {M7}.

8.3.3 Relative clause definite clitic

Relative clause definite clitics attach to relative clause-final adjectives in agreement with the noun modified by the clause. In (33a), the singular clitic on $\acute{o}n = \acute{f}$ 'bad=RDM' is in agreement with the singular noun $k\bar{o}r$ 'word' and in (b), the plural clitic on $\bar{o}n-g = \bar{f}$ 'young-PL=RDM' is in agreement with the plural noun $n\bar{a}lg$ 'girls'.

- (33a) $k\bar{o}r \acute{a}$ $k\bar{o}r$ $n\acute{a}$ $\acute{o}n = \acute{f}$
 speaks 1sA word REL.SG bad=RDM
 'She speaks to me rudely (lit. word which is bad).' (Assa6)
- (b) $b\bar{a}arg = \acute{a}$ $\eta\acute{a}\acute{s}-\acute{a} \grave{n}$ $n\bar{a}lg$ $n\grave{a}$ $\bar{o}n-g = \bar{f}$
 Baggara=DEF search.for-CONT.P girls REL young-PL=RDM
 'The Baggara were kidnapping girls which were young.' (Minj2)

The relative clause definite clitics $=\acute{E}/=\grave{E}$ on singular and plural adjectives are the same as on nouns.

Table 25: Relative clause definite clitics on adjectives

Stem-final segment	RDM ADJ SG	RDM ADJ PL
(Monosyllabic) long vowel or underlying approximant	$=\acute{E}$	
(Polysyllabic) vowel	$=\acute{E}$	
Consonant	$=\acute{E}$	$=\grave{E}$

Monosyllabic long vowel and underlying approximant-final adjectives attach the relative clause definite clitic $=\acute{E}$ with High tone.

(34) Relative clause definite clitic $=\acute{E}$ on monosyllabic singular adjectives

Stem-final	ADJ SG	RDM ADJ SG	
/a/	$y\acute{a}\acute{a}$	$y\acute{a}\acute{a}. = \acute{e}$	'new'
/ə/	$b\acute{s}\acute{s}$	$b\acute{s}\acute{s}. = \acute{f}$	'acidic'
/u/	$c\acute{u}\acute{u}$	$c\acute{u}\acute{u}. = \acute{f}$	'sweet'
/ε/	$c\acute{e}\acute{e}$	$c\acute{e}\acute{e}. = \acute{e}$	'unavailable'
/i/	\hat{n}	$\hat{n}. = \bar{i}$	'heavy'
/y/	$\acute{a}\bar{e}$	$\acute{a}. = \bar{e}$	'sour'
/y/	$\grave{q}\bar{u}\bar{i}$	$\grave{q}\bar{u}\bar{i}. = \bar{i}$	'black'

Polysyllabic vowel-final adjectives also attach the clitic $=\acute{E}$. In fast speech, the stem-final vowel can be elided such as in $\bar{l}\bar{u}s = \acute{f}$ 'hot'.

(35) **Relative clause definite clitic =É on polysyllabic vowel final singular adjectives**

Stem-final	ADJ SG	RDM ADJ SG	
/a/	mādā	mādā. = é	‘big’
/ə/	ḍəmḍ	ḍəmḍ. = í	‘blind’
/u/	lūsú	lūsú. = í	‘hot’
/i/	wílí	wílí. = í	‘reflective’

Consonant-final singular adjectives attach the relative clause definite clitic =É.

(36) **Relative clause definite clitic =É on consonant final singular adjectives**

Stem-final	ADJ SG	RDM ADJ SG	
/r/	kár	kár = é	‘loose’
/l/	dómɔl	dómɔl = é	‘big’
/n/	ón	ón = í	‘bad’

Consonant-final adjectives attach the clitic =É with High tone and plural adjectives attach the clitic =É with Low tone. Clitic High tone lowers to Mid following stem-final Low tone {M9} and the Mid of stem-final HM tone assimilates to clitic Low tone {M7}.

(37) **Relative clause definite clitic =É/=È on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	RDM ADJ SG	RDM ADJ PL	
H	bér	bér-g	bér = é	bér-g = è	‘clean’
M	bánḍāl	bánḍāl-g	bánḍāl = é	bánḍāl-g = è	‘weak’
L	kóófār	kóófār-g	kóófār = ē	kóófār-g = è	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = é	kāyáár-g = è	‘beautiful’

8.3.4 Dative and locative copular clitics

As in nouns, dative and locative copular clitics have the same morphology in adjectives and are both discussed in this section. The dative clitic attaches to noun phrase-final adjectives to indicate recipient or beneficiary roles.

- (38) bəsərəniiggə ʃɔgg ɲālg = **ān**
 were.lying people young=DAT
 ‘They were lying to the young people.’

The singular locative copula *īn/ēēn* of (39a) is replaced by the clitic =*ān* attached to the adjective in (b). The plural locative copula *ēggān* of (c) is replaced by the same clitic in (d).

(39) **Locative copular clauses**

- (a) jāā bāṇḍāl **fīn** wéé bèṇṭ
 person weak LCM house beside
 ‘A weak person is beside a house.’
- (b) jāā bāṇḍāl = **ān** wéé bèṇṭ
 person weak=LCM house beside
 ‘A weak person is beside a house.’
- (c) jōgg bāṇḍāl-g **ēggān** wéé bèṇṭ
 people weak-PL LCM house beside
 ‘Weak people are beside a house.’
- (d) jōgg bāṇḍāl-g = **ān** wéé bèṇṭ
 people weak-PL=LCM house beside
 ‘Weak people are beside a house.’

Polysyllabic vowel-final adjectives attach the dative and locative copular clitic = \bar{n} , and consonant-final singular and plural adjectives attach the clitic = $\bar{A}n$ with HM tone, the same as in nouns with these types of final segments.

Table 26: Dative and locative copular clitics on adjectives

Stem-final segment	DAT/LCM ADJ SG	DAT/LCM ADJ PL
(Polysyllabic) vowel	= \bar{n}	
Consonant	= $\bar{A}n$	= $\bar{A}n$

The dative and locative copula clitic = \bar{n} attaches to vowel-final adjectives and the clitic = $\bar{A}n$ attaches to consonant-final adjectives.

(40) **Dative and locative copular clitic on singular adjectives**

Stem-final	ADJ SG	DAT/LCM ADJ SG	
Vowel	ḍēmḍ	ḍēmḍ = n	‘blind’
Consonant	ṇāán	ṇāán = ān	‘young’

The clitic = $\bar{A}n$ attaches to both singular and plural adjectives. Clitic High tone lowers to Mid following stem-final Low tone {M9}.

(41) **Dative and locative copular clitic = $\bar{A}n$ on adjectives**

Stem-final	ADJ SG	ADJ PL	DAT/LCM ADJ SG	DAT/LCM ADJ PL	
H	bér	bér-g	bér = ān	bér-g = ān	‘clean’
M	bāṇḍāl	bāṇḍāl-g	bāṇḍāl = ān	bāṇḍāl-g = ān	‘weak’
L	kóóḥār	kóóḥār-g	kóóḥār = ān	kóóḥār-g = ān	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = ān	kāyáár-g = ān	‘beautiful’

8.3.5 Relative clause dative/locative copular clitics

The relative clause dative and locative copular clitics have the same morphology and are both discussed in this section. Dative relative clauses are always marked with the clitic =*ÉĒn*/=*ÈĒn* which agrees in number with the head noun of the relative clause.

- (42a) á gǎf jèèm jǎā ná sèggār = **éĒn**
 1sN give something person REL strong = RDTM
 ‘I give something to the strong person.’

- (b) á gǎf jèèm jǒgg nà sèggār-g = **èĒn**
 1sN give something person REL strong = RDTM
 ‘I give something to the strong people’

The relative clause clitic =*É* and locative copula *īn/éĒn* of (42a) is replaced by the singular clitic =*ÉĒn* in (b). The relative clause clitic =*È* and locative copula *ēggàn* of (c) is replaced by the plural clitic =*ÈĒn* in (d). Unlike locative copular clitics, relative clause copular clitics only attach to definite noun phrases and not phrases unmarked for definiteness; relative clauses unmarked for definiteness only use locative copulas *īn/éĒn* and *ēggàn*.

(43) Relative clause locative copular clauses

- (a) jǎā ná bāḋāl = **é** **īn** wéé bèḋ
 person REL weak=RDM LCM house beside
 ‘The weak person is beside a house.’
- (b) jǎā ná bāḋāl = **éĒn** wéé bèḋ
 person REL weak=RDM.LCM house beside
 ‘The weak person is beside a house.’
- (c) jǒgg nà bāḋāl-g = **è** **ēggàn** wéé bèḋ
 people REL weak-PL=RDM LCM house beside
 ‘The weak people are beside a house.’
- (d) jǒgg nà bāḋāl-g = **èĒn** wéé bèḋ
 people REL weak-PL=RDM.LCM house beside
 ‘The weak people are beside a house.’

Singular relative clauses with final adjectives attach the dative and locative copular clitic =*ÉĒn*, and plural relative clauses attach the clitic =*ÈĒn*.

Table 27: Relative clause dative/locative copular clitics on adjectives

Stem-final segment	RDTM/RLCM ADJ SG	RDTM/RLCM ADJ PL
(Polysyllabic) vowel	=ÉĒn	
Consonant	=ÉĒn	=ĒĒn

The relative clause dative and locative copular clitic =ÉĒn attaches to both vowel-final and consonant-final adjectives.

(44) **Relative clause dative/locative copular clitics =ÉĒn on singular adjectives**

Stem-final	ADJ SG	RDTM/RLCM ADJ SG	
Vowel	ḍəmḍ	ḍəmḍ. = ĩn	‘blind’
Consonant	ṇāán	ṇāán = éĕn	‘young’

Singular adjectives attach the clitic =ÉĒn with HM tone and plural adjectives attach the clitic =ĒĒn with Low tone. Clitic High tone lowers to Mid following stem-final Low tone {M9}. Stem-final HM tone becomes HL tone before clitic Low tone {M7}.

(45) **Relative clause dative/locative copular clitics =ÉĒn/=ĒĒn on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	RDTM/RLCM ADJ SG	RDTM/RLCM ADJ PL	
H	bér	bér-g	bér = éĕn	bér-g = ěn	‘clean’
M	bánḍāl	bánḍāl-g	bánḍāl = éĕn	bánḍāl-g = ěn	‘weak’
L	kṣṣfār	kṣṣfār-g	kṣṣfār = ěĕn	kṣṣfār-g = ěn	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = éĕn	kāyáár-g = ěn	‘beautiful’

8.3.6 Accompaniment clitic

Accompaniment clitics attach to noun phrase-final adjectives.

- (46) bāárg = á áḍḍ`n è jāā ná sèggār = ě
 Baggara = DEF coming with person REL strong = ACM
 ‘The Baggara were coming with a strong person.’

Polysyllabic vowel-final adjectives attach the accompaniment clitic =nĒ with Mid tone, and consonant-final singular and plural adjectives attach the clitic =Ē with HM tone, the same as in nouns with these types of final segments.

Table 28: Accompaniment clitics on adjectives

Stem-final segment	ACM ADJ SG	ACM ADJ PL
(Polysyllabic) vowel	=nĒ	
Consonant	=Ē	=Ē

The accompaniment clitic $=n\bar{E}$ attaches to vowel-final adjectives and the clitic $=\bar{E}$ attaches to consonant-final adjectives.

(47) **Accompaniment clitics on singular adjectives**

Stem-final	ADJ SG	ACM ADJ SG	
Vowel	ḍəmḍ	ḍəmḍ = nē	‘blind’
Consonant	nāán	nāán = ē	‘young’

The clitic $=\bar{E}$ attaches to both singular and plural adjectives. Clitic High tone lowers to Mid following stem-final Low tone {M9}.

(48) **Accompaniment clitic $=\bar{E}$ on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	ACM ADJ SG	ACM ADJ PL	
H	bér	bér-g	bér = ē	bér-g = ē	‘clean’
M	bánḍāl	bánḍāl-g	bánḍāl = ē	bánḍāl-g = ē	‘weak’
L	kóófār	kóófār-g	kóófār = ē	kóófār-g = ē	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = ē	kāyáár-g = ē	‘beautiful’

8.3.7 Relative clause definite and accompaniment clitics

Accompaniment relative clauses can be marked or unmarked for definiteness. When unmarked, the accompaniment clitic attaches relative clause-finally, as in (49).

When marked, the accompaniment clitic attaches after the relative clause definite clitic, as in (50). The relative clause definite and accompaniment clitics $=\acute{E}\acute{E}=n\bar{E}/=\acute{E}\acute{E}=n\bar{E}$ agree in number with the head noun of the relative clause.

- (49) bāárg = á áḍḍá n è jāā ná sèggār = \bar{E}
 Baggara = DEF coming with person REL strong = ACM
 ‘The Baggara were coming with a strong person.’

- (50) bāárg = á áḍḍá n è jāā ná sèggār = $\acute{E}\acute{E}=n\bar{E}$
 Baggara = DEF coming with person REL strong = RDM = ACM
 ‘The Baggara were coming with the strong person.’

Singular adjectives attach the relative clause definite and accompaniment clitic $=\acute{E}\acute{E}=n\bar{E}$, and plural adjectives attach the clitic $=\acute{E}\acute{E}=n\bar{E}$.

Table 29: Relative clause definite and accompaniment clitics on adjectives

Stem-final segment	RDM=ACM ADJ SG	RDM=ACM ADJ PL
(Polysyllabic) vowel	$=\acute{E}\acute{E}=n\bar{E}$	
Consonant	$=\acute{E}\acute{E}=n\bar{E}$	$=\acute{E}\acute{E}=n\bar{E}$

The relative clause definite and accompaniment clitic $=\acute{E}\acute{E}=n\bar{E}$ attaches to both vowel-final and consonant-final adjectives.

(51) **Relative clause definite and accompaniment = $\acute{E}\acute{E}=n\bar{E}$ on singular adjectives**

Stem-final	ADJ SG	RDM=ACM ADJ SG	
Vowel	ɔ̀m̩	ɔ̀m̩. = íí = nī	‘blind’
Consonant	ɲáán	ɲáán = éé = nē	‘young’

Singular adjectives attach the clitic = $\acute{E}\acute{E}=n\bar{E}$ with H=M tone and plural adjectives attach the clitic = $\acute{E}\acute{E}=n\bar{E}$ with Low=Mid tone. Relative clause clitic High tone lowers to Mid following stem-final Low tone {M9}. Stem-final HM tone becomes HL tone before relative clause clitic Low tone {M7}.

(52) **Relative clause definite and accompaniment = $\acute{E}\acute{E}=n\bar{E}$ / = $\grave{E}\grave{E}=n\bar{E}$ on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	RDM=ACM ADJ SG	RDM=ACM ADJ PL	
H	bér	bér-g	bér = éé = nē	bér-g = èè = nē	‘clean’
M	bándāl	bándāl-g	bándāl = éé = nē	bándāl-g = èè = nē	‘weak’
L	kóófār	kóófār-g	kóófār = ēē = nē	kóófār-g = èè = nē	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = éé = nē	kāyáár-g = èè = nē	‘beautiful’

8.3.8 Subordinate clause-final clitic

The clitic = \acute{E} attaches clause-final adjectives of subordinate clauses such as with the conjunction \acute{E} *gārā* ‘when’.

- (53) \acute{E} *gārā* bə̀rɔ̌ = ɔ̌ ʈúr-s = ʌ ʝāā ná sèggār = \acute{E}
 GP when lion = DEF see-COMP = SBO1 person REL strong = SBO
 ‘When the lion saw a strong person, . . .’

The subordinate clause clitic = \acute{E} attaches to singular and plural adjectives with stem-final consonants and the clitic = $n\acute{E}$ attaches to stem-final vowels, the same as in nouns with these types of final segments.

Table 30: Subordinate clause clitic

Stem-final segment	SBO ADJ SG	SBO ADJ PL
Vowel	= $n\acute{E}$	
Consonant	= \acute{E}	= \acute{E}

Monosyllabic long vowel and underlying approximant-final adjectives attach the subordinate clause clitic = $n\acute{E}$. Occasionally, the clitic can be attached without *n* as in \acute{E} = *í* ‘heavy = SBO’.

(54) **Subordinate clause clitic =*nĒ* on monosyllabic singular adjectives**

Stem-final	ADJ SG	SBO ADJ SG	
/a/	yáá	yáá = né	‘new’
/ə/	bóó	bóó = ní	‘acidic’
/u/	cúú	cúú = ní	‘sweet’
/ɛ/	céé	céé = né	‘unavailable’
/i/	îî	îî = nî	‘heavy’
/y/	âê	âê = nê	‘sour’
/y/	ḍùì	ḍùì = nî	‘black’

Polysyllabic vowel-final adjectives also attach the subordinate clitic =*nĒ*, and Occasionally the clitic can be attached without *n* as in *lūsú. = í* ‘hot = SBO’.

(55) **Subordinate clause clitic =*nĒ* on polysyllabic vowel-final singular adjectives**

Stem-final	ADJ SG	SBO ADJ SG	
/a/	mādā	mādā = né	mādā = é ‘big’
/ə/	ḍəmō	ḍəmō = ní	ḍəmō = í ‘blind’
/u/	lūsú	lūsú = ní	lūsú = í ‘hot’
/i/	wīlī	wīlī = ní	wīlī = í ‘reflective’

Consonant-final singular adjectives attach the subordinate clitic =*Ē*.

(56) **Subordinate clause clitic =*Ē* on consonant-final singular adjectives**

Stem-final	ADJ SG	SBO ADJ SG	
/r/	kár	kár = é	‘loose’
/l/	dómōl	dómōl = é	‘big’
/n/	ón	ón = í	‘bad’

Consonant-final singular and plural adjectives attach the subordinate clause clitic =*Ē* with High tone which lowers to Mid following stem-final Low tone {M9}.

(57) **Subordinate clause clitic =*Ē* on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	SBO ADJ SG	SBO ADJ PL	
H	bér	bér-g	bér = é	bér-g = é	‘clean’
M	bándāl	bándāl-g	bándāl = é	bándāl-g = é	‘weak’
L	kóófār	kóófār-g	kóófār = ē	kóófār-g = ē	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = é	kāyáár-g = é	‘beautiful’

8.3.9 Relative clause definite and subordinate clause clitics

Relative clauses in subordinate clauses can be marked or unmarked for definiteness. When unmarked, the subordinate clitic attaches relative clause-final, as in (a). When

marked, the subordinate clitic attaches after the relative clause definite clitic, as in (b). The relative clause definite and subordinate clitic =ÉÉ=nÉ/=ÈÈ=nĒ agrees in number with the head of the relative clause.

- (58a) é gāŕá bàṛḍḍ túr-s=ɿ jāā ná sèggār=é
 GP when lion.DEF see-COMP=SBO1 boy REL strong=SBO
 ‘When the lion saw a strong person, . . ’
- (b) é gāŕá bàṛḍḍ túr-s=ɿ jāā ná sèggār=ÉÉ=né
 GP when lion.DEF see-COMP=SBO1 boy REL strong=RDM=SBO
 ‘When the lion saw the strong person, . . ’

Singular adjectives attach the relative clause definite and subordinate clitic =ÉÉ=nÉ, and plural adjectives attach the clitic =ÈÈ=nĒ.

Table 31: Relative clause definite and subordinate clause clitics on adjectives

Stem-final segment	RDM=SBO ADJ SG	RDM=SBO ADJ PL
(Polysyllabic) vowel	=ÉÉ=nÉ	
Consonant	=ÉÉ=nÉ	=ÈÈ=nĒ

The relative clause definite and subordinate clitic =ÉÉ=nÉ attaches to both vowel-final and consonant-final adjectives.

- (59) **Relative clause definite and subordinate clitic =ÉÉ=nÉ on singular adjectives**

Stem-final	ADJ SG	RDM=SBO ADJ SG	
Vowel	ḍəmḍ	ḍəmḍ. = í = ní	‘blind’
Consonant	jāán	jāán = éé = né	‘young’

Singular adjectives attach the clitic =ÉÉ=nÉ with H tone and plural adjectives attach the clitic =ÈÈ=nĒ with Low=Mid tone, where the subordinate clitic =nÉ High tone lowers to Mid following relative clause clitic =ÈÈ Low tone {M9}. Relative clause clitic High tone lowers to Mid following stem-final Low tone {M9}. Stem-final HM tone becomes HL tone before relative clause clitic Low tone {M7}.

- (60) **Relative clause definite and subordinate clitics =ÉÉ=nÉ/=ÈÈ=nĒ on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	RDM=SBO ADJ SG	RDM=SBO ADJ PL	
H	bér	bér-g	bér = éé = né	bér-g = èè = nē	‘clean’
M	bándāl	bándāl-g	bándāl = éé = né	bándāl-g = èè = nē	‘weak’
L	kóófār	kóófār-g	kóófār = ēē = né	kóófār-g = èè = nē	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = éé = né	kāyáár-g = èè = nē	‘beautiful’

9 Verb stem morphology

9.1 Introduction

The verb word structure can be ordered according to the schemes of (1). The verb root tends to be monosyllabic, with optional onset and coda. The verb stem is composed of the root, and optional slots for antipassive (ANTIP), causative (CAUS), and modal or aspect morphemes. The verb word is made up of the stem and optional slots for agented passive (PAS.A), passive (PAS) or bound pronoun, and imperfect (IPF), perfect (PF), subordinate (SBO1,2), or relative clause definite marker clitics (RDM).

- (1) Verb root = (C)V(C)(C)
 Verb stem = [Verb root] + (ANTIP) + (CAUS) +
 ({INF, SBJV, IMP, COMP, INCP, CONT, IMP.D, COMP.D, CONT.D})
 Verb word = [Verb stem] + ({PAS.A, PAS, PRON}) + ({IPF, PF, SBO, RDM})

The verb word is further represented in table 32 by the order and options of each position or ‘slot’, where each item in the column is an example option. The morphemes are briefly explained following the table, after which, a few examples are given in (3).

Table 32: Verb word bound morphemes and ordering

Verb stem				Outside verb stem	
root	ANTIP	CAUS	Modality/ Aspect	PAS.A, PAS, PRON	IPF, PF SBO, RDM
[V]	-An _{ANTIP}	-s ⁺ A _{CAUS} -ɖ ⁺ A _{CAUS}	-C _{INF} -Ø, -C(A) _{SBJV} -ɖA _{SBJV.PL} -Ø, -n _{IMP} -ɖ ⁺ A _{IMP.PL} -sA _{COMP} -Ø _{INCP} -Ān _{CONT.P} -Ān _{CONT.N} -CÁggĀ _{COMP.D} -(CÁg)gĀn _{CONT.N.D} -(CÁg)gĀ _{IMP.D} -ɖúū _{IMP.PL.D} -CĀr _{PF}	=Ē, =ÉĒ _{PAS.A} =ĀnĀ, =Ā _{PAS} =E _{3sA} =aaggá _{1pA} =ĭn _{3sD} =âggón _{1pD}	=É _{IPF} =Ē(ggĀ) _{IPF} =ĭ _{IPF} =ĭn(ggĀ) _{IPF} =Ē _{SBO1} =Ē _{SBO1} =Ē _{SBO2} =ū _{SBO2} =É _{RDM} =Ē _{RDM} =Ā _{PF} =r _{PF} =gg _{VN.PL} =A _{gg} _{VN.PL}

When a verb is marked as having no object, it attaches the antipassive suffix -An, which precedes any other morphemes (9.10). Causative suffixes -s⁺A, -ɖ⁺A have [+ATR] quality which spreads in both directions in the verb word (9.11).

Third singular and first, second, and third plural subjunctive (SBjV) forms are distinguished from first and second person singular forms by the suffix *-ɬA* (9.3). Imperatives (IMP, IMP.PL) addressed to more than one person are distinguished from imperatives addressed to one person by the suffix *-ɬ^hA* (9.4).

Aspect is marked segmentally in the verb word—by the completive (COMP) suffix *-sA* in (2a) and the continuous suffixes *-Ān/-Ān* in (b-c). Past tense is marked by tone on the verb stem—High tone on the non-past continuous (CONT.N) suffix *-Ān* in (b) and MH on the past continuous (CONT.P) suffix *-Ān* in (c). Future tense is marked by tone outside the verb word on the subject pronoun—High tone on the non-future subject pronoun *á* in (d) and HM on the future subject pronoun *â* in (e).

(2) Clauses showing aspect and tense

- | | | | | | |
|-----|----------|----------|----------------|----------|---------------------------------|
| (a) | COMP | á | ɖùr-sù | kólólɖ=ɖ | ‘I buried the egg.’ |
| (b) | CONT.N | á, â | ɖùr- ān | kólólɖ=ɖ | ‘I am/will be burying the egg.’ |
| (c) | CONT.P | á, â | ɖùr- ān | kólólɖ=ɖ | ‘I was burying the egg.’ |
| (d) | INCP | á | ɖùr | kólólɖ=ɖ | ‘I bury the egg.’ |
| (e) | INCP FUT | â | ɖùr | kólólɖ=ɖ | ‘I will bury the egg.’ |

Aspect is divided into completive and incomplete action. As mentioned, completive verbs are marked by a morpheme (9.5). There is no incomplete (INCP) morpheme, but in the absence of all aspect or mood morphemes, ‘incomplete’ is the interpretation of the verb form (9.6). The incomplete can be specified as continuous, thereby taking a past or non-past suffix (9.7). Deictic (D) suffixes such as *-CĀggĀ*, *-(CĀg)gĀn*, *-(CĀg)gĀ*, *-ɖúū* indicating direction and distance also attach to the root (9.9).

Agented passive (PAS.A) clitics *=Ē*, *=ĒĒ*, often used in clauses with object focus to indicate a post-verbal encoding of an agent (or experiencer), agree in number with the agent (10.2). The passive (PAS) clitic *=ĀnĀ* attaches to stems with vowel-final suffixes whereas *=Ā* attaches to stems with consonant-final suffixes and suffix-less stems (10.3). Object pronoun (ACC) (10.4), dative pronoun (DAT) (10.5), imperfect (IPF) (10.6), and verb-final subordinate (SBO1,2) (10.7) clitics indicate person and number. The relative clause definite marker (RDM) agrees in number with the nominative person form (10.9). A perfect (PF) bound morpheme *-CĀr*, *=Ār*, *=r* can attach to nouns or verbs and can have various allomorphs for various verb forms. Although the morpheme *-CĀr* on imperative and incomplete verbs is analyzed as a suffix and part of the stem, it is discussed along with the other perfect bound morphemes in (10.8), which are clitics and outside the stem. Verbal noun (VN) plural clitics *=gg*, *=Agg* attach to incomplete surface forms to nominalize the verb (10.10). Adjectives used as verbs and suffixing verb inflectional suffixes are also discussed (10.11).

In addition, there is evidence for a middle (MID) verb form which, in at least a

handful of verbs, is distinguished by [+ATR] vowels and tone change on the root. However, since only a limited amount of data was collected on this form, the middle is not presented in the verb morphology, but only in 14.5.2 on transitive verbs.

In (3), example verb forms are given with formulations with each of the five morpheme slots. The symbol \emptyset indicates that the slot is not filled by any morpheme.

(3) **Example verb forms and formulation**

Verb form	Formulation
INCP 3sN	$[V]_{\text{Root}} + \emptyset + \emptyset + \emptyset + \emptyset + \emptyset$ kóm 'destroy, chop'
ANTIP CAUS SBJV 2pN	$[V]_{\text{Root}} + \text{An}_{\text{ANTIP}} + \text{d}^+ \text{A}_{\text{CAUS}} + \text{dA}_{\text{SBJV}} + \emptyset + \emptyset$ kúm-ũn-ɖ-ʒn 'to cause to destroy something'
ANTIP COMP PAS	$[V]_{\text{Root}} + \text{An}_{\text{ANTIP}} + \emptyset + \text{sA}_{\text{COMP}} + \bar{\text{An}}_{\text{PAS}} + \emptyset$ kóm-ʒn-s = āná 'something was destroyed'
COMP 3sN/2pA	$[V]_{\text{Root}} + \emptyset + \emptyset + \text{sA}_{\text{COMP}} + \emptyset + \text{ʒggʒ}_{2\text{pA}} + \emptyset$ kóm-s = ʒggó 'he destroyed you'
COMP 3sN/2pA RDM	$[V]_{\text{Root}} + \emptyset + \emptyset + \text{sA}_{\text{COMP}} + \emptyset + \text{ʒggʒ}_{2\text{pA}} + \bar{\text{E}}_{\text{RDM}}$ kóm-ɖ = ʒgg = é 'he who destroyed you'

Verb stem morphology (suffixes) is discussed in this chapter and verb word morphology (clitics) is discussed in the next. The majority of verb suffixes are inflectional morphemes, the exceptions being the antipassive and causative suffixes. The majority of verb clitics are derivational or clausal morphemes, the exceptions being the imperfect, and perfect clitics. Whereas some inflectional suffixes cannot combine with other inflectional suffixes (*COMP-CONT), nearly all clitics can combine with all inflectional suffixes.

As in nouns, a primary distinction between roots and stems in verbs is whether the bound morpheme attaches to underlying-final segments or to surface-final segments. Suffixes attaching to verb roots attach to underlying root-final segments, whereas clitics attaching to verb stems attach to surface-final segments.

In (4a), the past continuous suffix $-\bar{\text{A}}n$ attaches to the underlying short vowel in $p\bar{\text{a}}\text{-}\bar{\text{a}}n$ 'guard.3sN-CONT.P', whereas the third singular object clitic $=\bar{\text{E}}$ attaches to the surface long vowel of the incomplete form ($p\bar{\text{a}}\bar{\text{a}} = \bar{\text{E}}$). In (4b-f), the object clitic attaches to the surface vowels of the incomplete forms rather than to the underlying plosives or approximants. However, in (b-c, e-f), the root-final segment can optionally surface as an approximant, just as when copular and definite clitics are attached to underlying approximant-final stems shown in (5) of 7.2.1 ($k\bar{\text{a}}\bar{\text{z}}/k\bar{\text{a}}.\bar{\text{z}} = n$, $k\bar{\text{a}}.w = \bar{\text{a}}n$ 'hyena=COP'; $\bar{\text{t}}\bar{\text{a}}\bar{\text{e}}/\bar{\text{t}}\bar{\text{a}}.\bar{\text{e}} = n$, $\bar{\text{t}}\bar{\text{a}}.y = \bar{\text{a}}n$ 'giraffe=COP'). The verb of (g) with root-final consonant is given for comparison.

(4) **Roots and stems compared**

	Underlying root UR	Surface root INF	Surface root-final INCP. 3sN	Verb stem suffix INCP.3sN -CONT.P	Verb word suffix INCP.3sN =3sA	
(a)	/pa/ M	pā-ḍ [pāḍ _o ˦]	pāā	pā.-án	pāā. = ē	‘guard’
(b)	/ab/ L	àb-b [àḅ˦]	àḥ	àw-án	àḥ. = ē, àw = ē	‘sit’
(c)	/kaʃ/ H	káʃ-ʃ [káʃ _o ˦]	káé	káy-án	káé. = ē, káy = ē	‘bring’
(d)	/cig/ M	cīg-g [cīg _o ˦]	cīi	cī.-ón	cīi. = ɪ	‘wear’
(e)	/ɲaw/ H	ɲáw-w [ɲáw]	ɲáó	ɲáw-án	ɲáó. = ē, ɲáw = ē	‘request’
(f)	/kɔy/ H	kóy-y [kóy]	kóé	kóy-án	kóé. = ē, kóy = ē	‘cook’
(g)	/ɲam/ M	ɲām-m [ɲām]	ɲām	ɲām-án	ɲām = ē	‘break’

Although no verb form is the same as the root for every verb, the infinitive form is the best representation of the root because it includes all underlying segments and tone. Most commonly, the infinitive form does not contain additional segments or tone other than the copied final consonant. There are seven attested tone melodies in verbs, although there are only two attested verbs with the melodies HM and ML (*bɛl* ‘name, call’, *léɛ* ‘come, arrive’; *dɔ́ɔs* ‘stand’, *būɲɔ́* ‘make big’).

(5) **Tonal contrasts in infinitive verb forms (see 9.2)**

	Root tone	INF	
(a)	H	fír-r	‘smell, pray’
(b)	M	cɔ́r-r	‘help’
(c)	L	ḍùr-r	‘bury’
(d)	HL	pêr-r	‘attach’
(e)	HM (rare)	bɛl-l	‘name, call’
(f)	ML (rare)	dɔ́ɔs-s	‘stand’
(g)	MH	kɔ́ɔ-ḍ	‘strike, ram’

Finite verb forms are inflected for subject person by tone added to the stem-final syllable. Regardless of the root tone, High tone is assigned to the stem-final syllable of third singular verbs; Low tone is assigned to the stem-final syllable of third plural verbs; and Mid tone is assigned to the stem-final syllable of first and second person forms. The fact that first and second person share the same tone might be seen as marking their shared property of being participants of the speech event.

(6) **Paradigm of completive verb *kóm-sA* ‘chop-COMP’ with subject pronouns (see 9.5)**

á	kóm-sō	1s	āgg	kóm-sō	1p
ó, ú	= kúm-sū	2s	ōgg, ūg	= kúm-sū	2p
ē	kóm-só	3s	ēggà	kóm-sò	3p

Root tone replacement is used for antipassives, causatives, and verbal nouns. In antipassive forms, root tone melodies are replaced by other tone melodies: High changes to HM, Mid changes to MH, and Low changes to LH.

(7) **Antipassive suffix *-An* on third singular completive verbs (see 9.10.2)**

Root	3sN	ANTIP	3sN	
tone	COMP	tone	ANTIP COMP	
H	fír-só	HM	fír-ān-só	‘smell’
M	cōr-só	MH	cōr-ōn-só	‘help’
L	ḍūr-sū	LH	ḍūr-ūn-sú	‘bury’

In causative forms, root tone melodies are also replaced by other tone melodies, as shown in (8).

(8) **Third singular causative completive verbs (see 9.11.2)**

Root	3sN	CAUS	3sN	
tone	COMP	tone	CAUS COMP	
H	fír-só	HM	fír-só	‘smell’
M	cōr-só	HM	cūr-sú	‘help’
L	ḍūr-sū	ML	ḍūr-sū	‘bury’
MH	kās-só	HM	kās-só	‘strike’

Finally, in verbal nouns, root tone melodies are replaced by other tone melodies, as shown in (9).

(9) **Verbal noun plural suffixes *-Agg, =gg* (see 10.10)**

Root	INF	VN	VN SG	VN PL	
tone		tone			
H	pál-l	M	pāl	pāl-āgg, pāl = g	‘cut’
L	f èl-l	ML	f èl	f èl-āgg, f èl = g	‘tell’
HL	pîr-r	ML	pîr	pîr-əgg, pîr = g	‘deceive’
HM	b èl-l	M	b èl	b èl-āgg	‘name’
MH	kāḍ-ḍ	M	kān	kāḍ-āgg	‘strike’

As in nouns, the starting point for verb stem tone assignment is the root tone, whereas the starting point of verb word tone assignment is the stem tone. The rules {M1-11} are applied to all verb suffixes. However, one or more of these rules, the tone rules {M5-11} in particular, are not applied in some of the verb clitics.

The chart of (10) summarizes the criteria for determining which verb bound morphemes are suffixes and thus a part of the stem, and which verb bound morphemes are clitics and thus outside of the stem, but part of the word. The perfect =*r* and relative clause definite clitics are attested to attach to more than one word category, as shown in chapter 4. All clitics with the exception of the verbal noun clitics can attach to all inflectional suffixes. Many of the clitics are attested to attach to the surface-final segments of stems as will be verified in the various sections of chapter 10³². Finally, one or more rules {M1-11} are not applied to some of the verb clitics, as will be summarized in 10.1 and later shown in the various sections. Although the four criteria are not all valid for any one clitic, none of these criteria are valid for any of the suffixes. Thus, they each individually lend support of the clitics being a different kind of morpheme than the suffixes.

(10) **Criteria for determining verb clitics (stem morphemes) vs. suffixes (root morphemes)**

		Attaches to more than one word category	Attaches to inflectional morphemes	Attaches to surface-final segments	Certain tone rules are not applied	Analyzed as a clitic (word morpheme)
9.3	SBJV	no	no	no	no	no
9.4	IMP	no	no	no	no	no
9.5	COMP	no	no	no	no	no
9.7	CONT	no	no	no	no	no
9.9	D	no	no	no	no	no
9.10	ANTIP	no	no	no	no	no
9.11	CAUS	no	no	no	no	no
10.8	PF - <i>Cqr</i>	no	no	no	no	no
10.2	PAS.A	no	yes	yes	yes	yes
10.3	PAS	no	yes	yes	yes	yes
10.4	Object PRON	no	yes	yes	yes	yes
10.5	Dative PRON	no	yes	yes	yes	yes
10.6	IPF	no	yes	unknown	yes	yes
10.7	SBO1, SBO2	no	yes	unknown	yes	yes
10.8	PF = <i>Ar</i> , = <i>r</i>	yes	yes	unknown	unkwn.	yes
10.9	RDM	yes	yes	yes	unkwn.	yes
10.10	VN PL	no	no	yes	unkwn.	yes

³² With further data, several other clitics in (10) may be attested to attach to surface-final segments.

Verb stem segmental morphology of the basic verb forms is presented in sections 9.2 through 9.7, followed by tonal morphology of these morphemes in 9.8. Afterwards, tone morphology follows segmental morphology for each morpheme. In stating the function of verb forms, genres in which the verb form frequently occurs are sometimes mentioned, although genre does not dictate which verb form is used.

9.2 Infinitive

Infinitives are the most common form used in foregrounded nuclear clauses of narratives, i.e. sequences of events. As such, they often encode actions that can be translated into English as past tense, such as in (11). Infinitives commonly occur following the infinitive verb *dɔ̃ɔs* ‘start’ as in (11a), but can follow various other verb forms and can be the first verb of a clause or sentence.

- (11a) *ānēndá ē dɔ̃ɔs-s ē bāg-g áńé = n*
 then 3pN start-INF 3pN grab-INF elephant = DEF
 ‘Then they started to grab an elephant.’ (Nyee8)
- (b) *mīi = n ē gùp-n lāŋ ālɔ̃ = á ē wāj-j tú*
 goat = DEF 3sN agree-INF then fox = DEF 3sN go-INF out
 ‘The goat agreed and then the fox got out.’ (Goat16-17)

As such, infinitives are used in finite sentences. As discussed in 9.3, subjunctive verbs are commonly used in typical non-finite contexts such as ‘want to X’.

Infinitive forms differ from finite forms in that they do not change with subject person, either in tone or [ATR] quality. Also, the subject pronouns preceding an infinitive verb differ from those of other verb forms. Singular pronouns of such verbs all have Mid tone and plural pronouns have Low tone. Also, second person pronouns are not clitics prefixed to the infinitive verbs, evidenced by the fact that they do not take the [ATR] quality of the verb. Because of these differences with other verb forms which change according to the subject person, this form which does not change with the subject is analyzed as the infinitive.

(12) Infinitive paradigms

- | | | | |
|---------------|-----------|---------------|-----------|
| (a) ‘fall’ | | (b) ‘bury’ | |
| <i>ā</i> | wál-l 1sN | <i>ā</i> | ɖùr-r 1sN |
| <i>ɔ̃</i> | wál-l 2sN | <i>ɔ̃</i> | ɖùr-r 2sN |
| <i>ē</i> | wál-l 3sN | <i>ē</i> | ɖùr-r 3sN |
| <i>à(gg)</i> | wál-l 1pN | <i>à(gg)</i> | ɖùr-r 1pN |
| <i>ɔ̃(gg)</i> | wál-l 2pN | <i>ɔ̃(gg)</i> | ɖùr-r 2pN |
| <i>è(gg)</i> | wál-l 3pN | <i>è(gg)</i> | ɖùr-r 3pN |
| PRON | fall.INF | PRON | bury.INF |

Table 33: Infinitive suffix

All root-final consonants	-C
---------------------------	----

Infinitive verbs generally surface the same as the root. Since plosives and approximants are not weakened word-finally in accordance with {P1b} of 2.1.3, it is posited that a copied final consonant is added to the underlying-final segment which surfaces as a single segment. Roots with final *n* as in (13h) optionally surface without the final consonant and then with a lengthened vowel, in accordance with {P4} in 2.3.3. Vowel-final roots add the segment -*ɔ̃* as in (o) or do not add any suffix as in (p). It is possible that the vowel-final verb of (o) used to have final *ɔ̃* and that the vowel-final verb of (p) used to have final *n*, since these segments optionally surface in some forms of the verb as will be seen in following sections.

(13) **Infinitive verbs with various root-final segments**

	Root	INF	
(a)	/ab/ L	àb-b [àb̃]	‘sit’
(b)	/kaɲ/ H	káj-ɲ [káj̃]	‘bring’
(c)	/cig/ M	cīg-g [cīg̃]	‘wear’
(d)	/cuɖ/ M	cūɖ-ɖ [cūɖ̃]	‘climb’
(e)	/lɔf/ L	lɔf-f [lɔf̃]	‘do magic’
(f)	/las/ M	lās-s [lās]	‘roll-up’
(g)	/ɲam/ M	ɲām-m [ɲām]	‘break’
(h)	/gɔn/ L	gòn-n [gò̃n], gò̃	‘grab’
(i)	/guɲ/ L	gùɲ-ɲ [gù̃ɲ]	‘agree’
(j)	/mal/ M	māl-l [māl]	‘gather’
(k)	/wɛr/ M	wēr-r [wēr]	‘watch’
(l)	/ɲaw/ H	ɲáw-w [ɲá̃w]	‘request’
(m)	/kɔy/ H	kóy-y [kó̃é]	‘cook’
(n)	/fɛð/ H	féð-ð [fɛ̃ð]	‘release’
(o)	/pa/ M	pā-ɖ [pā̃ɖ̃]	‘guard’
(p)	/bɛɛ/ L	bèè	‘say’

9.3 Subjunctive

Subjunctive verb forms are used to introduce post-nuclear (subordinate) clauses which indicate the purpose of a nuclear (main) clause. These verbs are introduced by a subject pronoun or by the subjunctive particle *ā* ‘to’. Subjunctives are common following imperative verbs such as in (14a). They may have a different subject than that of the previous verb, as seen in (c).

- (14a) *ē* *bèè* “*léē* *ā* *nám-ɖā* *ɲéérèmə = n!*”
 3pN said.INCP come.IMP SBJV eat-SBJV.1pN devil.name = DEF
 ‘They said, “Let’s eat the nyeerma!” ’ (Nyee7)

- (b) \bar{e} wár kàlèèð \bar{a} kóm-ḡḡ jḡg = ḡ = r
 3sN took.INCP (sword) SBJV cut-SBJV.3sN people = DEF = EV
 ‘... taking a koleez sword to kill (hack up completely) the people.’
 (Fand5)
- (c) mīī = n á gáf-àn jḡgg fāṅ = ān \bar{a} nóm-ḡ = ūggə
 goat = 1sN give- people old = SBJV /nām/eat.3pN-
 DEF CONT.N DAT SBJV = IPF
 ‘... (but) the goat I am giving to the old men to eat.’ (Jooj12)

Regardless of what grammatical verb form the subjunctive follows, it has the same segmental form. In (a) it follows a verb, in (b) an incompleted verb, and in (c) a continuous form.

Subjunctive verbs add the suffix *-ḡA* to the root, except in first and second singular person forms, where other suffixes can sometimes be added depending on the root-final segments. A subject pronoun with Mid tone introduces the subjunctive verb. Plural pronouns before such verbs do not have the plural marker *-gg*, and second person pronouns are optionally [+/- ATR] regardless of the [ATR] quality of the root vowel. The subjunctive particle \bar{a} is an optional alternative for introducing third person subjunctive verbs, as shown in (14b,c).

(15) Subjunctive paradigms

(a) ‘to run’	(b) ‘to cut’
\bar{a} gəl-(à) 1sN	\bar{a} rùm-(ù) 1sN
\bar{o} , \bar{u} = gəl-(ə) 2sN	\bar{o} , \bar{u} = rùm-(ù) 2sN
\bar{e} , \bar{a} gəl-ḡā 3sN	\bar{e} , \bar{a} rùm-ḡū 3sN
\bar{a} gəl-ḡà 1pN	\bar{a} rùm-ḡù 1pN
\bar{o} , \bar{u} = gəl-ḡə 2pN	\bar{o} , \bar{u} = rùm-ḡù 2pN
\bar{e} , \bar{a} gəl-ḡà 3pN	\bar{e} , \bar{a} rùm-ḡù 3pN
PRON run- SBJV	PRON cut- SBJV

First and second singular subjunctive verbs most commonly have the same segments as the root, but may take predictable suffixes according to the root-final segment, as shown in table 34, where segments in parentheses are optional. Other subjunctive forms take the suffix *-ḡA*, where A is a back vowel taking the [ATR] and [round]

Table 34: Subjunctive suffixes

	SBJV 1sN, 2sN	SBJV 3sN, 1pN, 2pN, 3pN
Root-final <i>b, ʃ, g</i>	-C(A)	-ḡA
Root-final <i>w, y</i>	-(n)(A)	-ḡA
Root-final vowel	-ḡ(A)	-ḡA
Other root-final segments	-(A)	-ḡA

features of the root.

In (16), first and third singular subjunctive forms with each of the root-final consonants are given. As in (i-k), first singular subjunctive verbs with root-final *b*, *j*, *g* attach the suffix *-CA* where *C* has the same features as the root-final consonant. As in (f-g), first singular forms with root-final approximants *w* and *y* attach the suffix *-(n)(A)* and the underlying approximant surfaces as a vowel, as will be explained shortly. The suffix-initial *-n* is sometimes elided, and when this happens, the approximant remains a vowel. As in (o), first singular subjunctives with root-final vowel add the same suffix as in third singular subjunctives *-d(A)*, except that the vowel is optional, or add the suffix *-n(a)* as in (p). First singular subjunctives with other root-final segments optionally attach the suffix *-(A)*.

(16) **Subjunctive verb forms with various root-final segments**

	Root	SBJV 1sN	SBJV 3sN	
(a)	/cuḍ/ M	cūḍ, cúḍ-ū	cúḍ-ḍú [cúḍú]	‘climb’
(b)	/las/ M	lās, lās-ā	lād-ḍá [ládá]	‘roll-up’
(c)	/gɔn/ L	gɔn, gɔn-ɔ	gɔḍ-ḍɔ [gɔḍɔ]	‘grab’
(d)	/fɛð/ H	fɛð, fɛð-ā	fɛḍ-ḍá [fɛḍá]	‘release’
			fɛð-ḍá [fɛðá]	‘release’
(e)	/wer/ M	wēr, wér-ā	wér-rá [wér:á], wér-ḍá	‘watch’
(f)	/ɲaw/ H	ɲáɔ-n(ɔ), ɲáɔ.-ɔ	ɲáw-wá [ɲáwá], ɲáɔ-ḍɔ	‘request’
(g)	/kɔy/ H	kóɛ-n(ɔ), kóɛ.-ɔ	kóɛ.-é, kóɛ-ḍɔ	‘cook’
(h)	/ab/ L	àb-b, àb-bà [àbà]	àḍ-ḍɔ	‘sit’
(i)	/kaɲ/ H	káj-ɲ, káj-ɲā [kájā]	káɛ-ḍá	‘bring’
(j)	/ciɡ/ M	cīg-g, cīg-gɔ [cígɔ]	cíg-ḍɔ	‘wear’
(k)	/lɔf/ L	lɔf, lɔf-ɔ	lɔf-ḍɔ	‘do magic’
(l)	/ɲam/ M	ɲām, ɲām-ā	ɲám-ḍá	‘break’
(m)	/ɡuɲ/ L	ɡuɲ, ɡuɲ-ù	ɡuɲ-ḍū	‘agree’
(n)	/mal/ M	māl, māl-ā	mál-ḍá	‘gather’
(o)	/pa/ M	pā-ɖ, pá-ḍā	pá-ḍá	‘guard’
(p)	/bɛɛ/ L	bèè-n, bèè-nà	bèè-ḍā, bèè-ā	‘say’

Third singular subjunctives have various alternations which are only attested in verb morphology. Those of (16a-d) undergo a coronal assimilation process. The root-final coronal consonants *ɖ*, *s*, *n*, *ð* take on all the features of the suffix-initial coronal *ɖ*. In 9.5, it will be seen how the same root-final segments assimilate to the initial *s* of the completive suffix *-sA*.

The third singular subjunctive forms of (16d-f) also undergo an assimilation process. The suffix-initial dental plosive assimilates to *ð*, *r*, and *w*. There are two forms for plural subjunctives with root-final *ð* as in (d): the root-final consonant either assimilates to the suffix consonant as in *fɛḍ-ḍā* ‘release’, or the suffix consonant assimilates to the root-final consonant as in *fɛð-ḍā* ‘release’. In (g), the suffix-

initial plosive may also assimilate to the underlying approximant γ (kóy.-yá) which weakens to the vowel ε after the suffix vowel a is elided (kóé.-é). This assimilation process to the root-final δ , r , and w does not always apply for every word with every speaker, but varies from word to word and from speaker to speaker.

Rule {P1b} in section 2.1.3 states that /b/, /ɟ/, /w/, /y/ are weakened word-finally to vowels with the same [ATR] quality as the preceding vowel. The same weakening process occurs syllable-finally before a consonant-initial suffix, provided that the underlying root-final consonant is not the same as the suffix-initial consonant. In the third singular subjunctive forms of (f-i), b becomes ɔ (*àð-dð* ‘sit’), ɟ becomes ε (*káé-ḡā* ‘bring’), w becomes ɔ (*ḡás-ḡḡ* ‘request’), and y becomes ε (*kóé-ḡḡ* ‘cook’) before the consonant-initial suffix $-ḡA$. The [+round] feature spread to the suffix vowel as in *ḡás-ḡḡ* ‘request’ is further support of the root-final segment weakening to a vowel. Similarly, in the first singular forms of (f-g), w becomes ɔ (*ḡás-nḡ* ‘request’), and y becomes ε (*kóé-nḡ* ‘cook’) before the consonant-initial suffix $-n(A)$. However, $b, \text{ɟ}$ do not become $\text{ɔ}, \varepsilon$ in the first singular forms *àb-bà* ‘sit’, *káɣ-ḡā* ‘bring’ of (h-i), and w does not become ɔ in the third singular form *ḡáw-wā* ‘request’ of (f), since the suffix-initial consonant has become the same as the underlying root-final consonant.

9.4 Imperative

The singular imperative is used for commanding one person as shown in (17a-b), whereas the imperative plural is used for commanding more than one person as shown in the second imperative of (c). Imperative forms may occur with a second person subject pronoun as in (b) or without as in (a, c).

(17) Imperative examples

- (a) haɣim, **kór-ḡ** kɔr-ēēgg cúgg
Hashim /kɔr/say-IMP word-PL nice.PL
‘Hashim, speak nice words!’
- (b) “sàlàḡ = ā”, ē bēē, “**ū = wór** ūūḡ cābb ánēén”
Hyena = DEF 3sN say-INF 2sN = /wár/carry.IMP 2sR up like.this
“Hyena”, he said, “Make yourself upright . . .” (Nyee32)
- (c) **bù** **ḡḡḡḡ-ḡḡ** kɔr ḡḡn ní mā māḡ
let.IMP /ḡḡḡn/hear-IMP.PL word 1sPs this very carefully
‘Please hear what I have to say!’ (Womn3)

Singular imperative forms generally have the same segmental form as the root, although a handful of imperative verbs attach suffixes, and some root-final segments are weakened when suffixes are not attached. Imperative plural forms take the

suffix $-dA^+$, where A^+ is underlyingly specified as [+ATR] and spreads the quality leftward to the root.

Table 35: Imperative suffixes

	IMP	IMP PL
Root-final <i>w, y</i>	-n	$-dA^+$
Other root-final segments	$-\emptyset$	$-dA^+$

Both imperative forms with various root-final consonants are shown in (18). Singular imperatives with root-final *n* as in (c) optionally elide the final segment. Imperatives with root-final *w* and *y* optionally attach the suffix $-n$ as in (f-g) which causes the root-final approximants to surface as vowels. Without the suffix, root-final approximants, as well as root-final plosives (h-j), are weakened to vowels or elided, in accordance with {P1b}. In imperative forms with root-final vowel, elided *n*, or elided *g* such as in (c, j, o), the root vowel is lengthened, in accordance with {P4}. Some imperatives with root-final vowel as in (p) add the suffix $-na$.

(18) **Imperative verb forms with various root-final segments**

	Root	IMP	IMP PL	
(a)	/cuḍ/ M	cūḍ-ú	cúḍ-ḍū [cúḍū]	‘climb’
(b)	/las/ M	lās	lṣḍ-ḍṣ [lṣḍṣ]	‘roll-up’
(c)	/gon/ L	gòñ, gḍḍ	gùḍ-ḍù [gùḍù]	‘grab’
(d)	/fēḍ/ H	fēḍ	fīḍ-ḍṣ [fīḍṣ]	‘release’
(d)			fīḍ-ḍṣ [fīḍṣ]	‘release’
(e)	/wēr/ M	wēr	wír-rṣ [wír:rṣ], wír-ḍṣ	‘watch’
(f)	/ṇaw/ H	ṇáṣ, ṇáṣ-n	ṇóú.-ū, ṇóú-ḍū	‘request’
(g)	/kəy/ H	kṣé, kṣé-n	kúí-ū, kúí-ḍū	‘cook’
(h)	/ab/ L	àḍ	ə̀ù-ḍù	‘sit’
(i)	/kaʃ/ H	káé	kṣí-ḍṣ	‘bring’
(j)	/cig/ M	cī	cíg-ḍṣ	‘wear’
(k)	/ləf/ L	lḍf	lùù-ḍù	‘do magic’
(l)	/ṇam/ M	ṇām	ṇóm-ḍṣ	‘break’
(m)	/guṇ/ L	gùṇ-ū	gùṇ-ḍù	‘agree’
(n)	/mal/ M	māl	mál-ḍṣ	‘gather’
(o)	/pa/ M	pāā	pṣ-ḍṣ	‘guard’
(p)	/bεε/ L	bèè-nā	bù-ḍṣ	‘say’

The plural imperative forms mostly have the same consonant alternations as plural subjunctive forms. In the plural imperatives of (18a-d) the root-final coronal consonants *ḍ, s, n* assimilate to the suffix-initial *ḍ*. In (d-e), the suffix-initial *ḍ* assimilates to root-final *ḍ* and *r*. Possibly in (f-g), the suffix-initial *ḍ* also assimilates to the root-final *w* and *y*, which then become vowels. In (f-i), the approximants *w, y* and plosives *b, ʃ* are weakened syllable-finally to vowels with the

same [ATR] quality as the preceding vowel. Similarly, the root-final *f* of (k) is also weakened syllable-finally to *u*.

A handful of singular imperatives with root-final *ɟ*, *s*, *ɲ*, *n*, *l*, *r*, *ʃ* attach the suffix *-A* such as in (18a, m). The vast majority of imperatives with these root-final segments do not attach the suffix but *dáàn-a* ‘push’, *dɔ̀ɔ̀s-ɔ̀* ‘stand, begin’, *bɛ́l-á* ‘possess’, and *sír-ɔ̀* ‘make smooth’ are some that do attach the suffix.

9.5 Completive

The completive verb form is used to describe actions that are finished. In 9.6, we discuss how incomplete forms are used for actions that are not finished. These forms should not be confused with the perfect and imperfect forms of 10.6 and 10.8 which indicate that an action remains or does not remain in the present or future. In (19), these forms are compared.

(19) Completive and incomplete compared with perfective and imperfective

- | | | | | | |
|-----|-------------|---|-----------------|------|---|
| (a) | COMP | ē | cúr-sú | ʔóón | ‘He tied the cow.’ (action is finished) |
| (b) | INCP | ē | cúr | ʔóón | ‘He ties the cow.’ (action is still happening or will still happen) |
| (c) | INCP
PF | ē | cúr= rér | ʔóón | ‘He ties the cow.’
(it will not need to be tied again) |
| (d) | INCP
IPF | ē | cúr-í | ʔóón | ‘He ties the cow.’
(it will later need to be tied again) |

In that the completive action is claimed to be already finished, the completive suffix is a marker for certainty. As such, it is more commonly used in foregrounded nuclear clauses of non-fictional narratives as in (a) than in foregrounded clauses of fictional narratives. As shown in (b), it is also commonly used in tail-head linkage points of departure which link old information of a previous clause with a new nuclear clause.

(20) Completive examples

- | | | | | | | | |
|-----|--|-------|-------------------------|----------------|------------------|----------------|----------|
| (a) | jāfārì = n | é | mánē | ʔɔ̀ | ɖàð-sɔ̀ | càðr-ēēgg = á | yɔ̀ɔ̀sɔ̀ |
| | Jafari = DEF | alone | just | /ɖàf/kill-COMP | rabbits-PL = DEF | four | |
| | ‘Jafari, by himself, killed four rabbits.’ (Jafr7) | | | | | | |
| (b) | é gārā | ē | wír-s =ɿ | ógg | ɖūmùùn | ʔàw = ēē = n | |
| | GP when | 3SN | /wēr/notice-COMP = SBO1 | place | towards | up = SBO = DEF | |
| | ‘When he looked up, . . .’ (Goat7) | | | | | | |

Table 36: Completive suffix

All root-final segments	-sA
-------------------------	-----

A completive paradigm is shown in (21). Second person subject pronouns are optionally [+/- ATR] regardless of the [ATR] quality of the root vowel.

(21) **Completive paradigms**

(a) 'bought the food'				(b) 'buried the egg'			
á	màr-sà	nāms = á	1sN	á	ḍùr-sù	kólólḍ = ṡ	1sN
ó, ú = m̀̀r-s̀̀		nāms = á	2sN	ó, ú = ḍ̀̀r-s̀̀		kólólḍ = ṡ	2sN
ē	mār-sā	nāms = á	3sN	ē	ḍ̀̀r-sū	kólólḍ = ṡ	3sN
āgg	mār-sà	nāms = á	1pN	āgg	ḍ̀̀r-sù	kólólḍ = ṡ	1pN
ōgg,				ōgg,			
ūg = m̀̀r-s̀̀		nāms = á	2pN	ūg = ḍ̀̀r-s̀̀		kólólḍ = ṡ	2sN
ēggà	mār-sà	nāms = á	3pN	ēggà	ḍ̀̀r-sù	kólólḍ = ṡ	3pN
PRON	buy-	food=DEF		PRON	bury-	egg=DEF	
	COMP				COMP		

Completive forms are listed in (22) with various root-final consonants. In the forms of (a-c), root-final coronals *ḍ*, *s*, *n* undergo assimilation to the suffix-initial *s*, just as they were shown to undergo assimilation to the subjunctive and imperative plural suffix-initial *ḍ* in 9.3-9.4. However, unlike in subjunctive and imperative plural forms, root-final *ḍ* in (d) is weakened to a vowel, just as root-final *w*, *y*, *b* in (e-g) are weakened to vowels in syllable-final position.

(22) **Completive verb forms with various root-final segments**

Root	COMP 3SN	
(a) /cuḍ/ M	cūs-sú	'climb'
(b) /las/ M	lās-sá	'roll-up'
(c) /gɔn/ L	gòs-sṡ	'grab'
(d) /fɛḍ/ H	fě́é-sá	'release'
(e) /ɲaw/ H	ɲáṡ-sṡ	'request'
(f) /kɔy/ H	kóé-sṡ	'cook'
(g) /ab/ L	àḍ-sṡ	'sit'
(h) /kaɲ/ H	káj-já	'bring'
(i) /mal/ M	māl-ḍá	'gather'
(j) /wer/ M	wēr-sá	'watch'
(k) /cig/ M	cīg-sṡ	'wear'
(l) /lɔf/ L	lòf-sṡ	'do magic'
(m) /ɲam/ M	ɲām-sá	'break'
(n) /guɲ/ L	gùɲ-sū	'agree'
(o) /pa/ M	pā-sá	'guard'
(p) /bɛɛ/ L	bèè-sā	'say'

One assimilation process is unique to completive verb forms as seen in (22h-i). The suffix-initial *s* of the completive form becomes *ɲ* following root-final *ɲ* and becomes

³³ As discussed in 10.8, when the perfect clitic attaches to a completive imperfect verb as in (23c), the meaning is distant past action.

Unlike completives, no suffix is attached to incomplete forms. Thus, incomplete forms generally have the same segmental form as the root, except that root-final segments weaken to vowels in accordance with {P1b}.

Table 37: Incomplete suffix

All root-final segments	-Ø
-------------------------	----

The incomplete paradigms of (24) can describe an ongoing action. Second person subject pronouns are optionally [+ATR] regardless of the [ATR] quality of the root vowel.

(24) **Incomplete paradigms**

(a) 'run'	(b) 'bury the egg'
á kār 1sN	á ðūr kólólđ = ɔ 1sN
ó, ú = kōr 2sN	ó, ú = ðūr kólólđ = ɔ 2sN
ē kār 3sN	ē ðūr kólólđ = ɔ 3sN
āgg kār 1pN	āgg ðūr kólólđ = ɔ 1pN
ōgg, ūg = kōr 2pN	ōgg, ūg = ðūr kólólđ = ɔ 2sN
ēggā kār 3pN	ēggā ðūr kólólđ = ɔ 3pN
PRON run.	PRON bury. egg=DEF
INCP	INCP

Third singular incomplete verbs are listed in (25) according to root-final consonants, along with infinitive, first singular subjunctive, and singular imperatives for comparison. As in singular imperatives, root-final *b*, *j*, *w*, *y* in incomplete forms of (a-b, l-m) are weakened to vowels {P1b} and *g* in (c) is elided word-finally {P2}. Incomplete forms with root-final *w* and *y*, optionally attach the suffix *-n*. In incomplete forms with root-final vowel or elided *g* such as in (c,o), the underlying short vowel is lengthened {P4}.

(25) **Incomplete verb forms with various root-final segments**

	Root	INF	SBJV 1sN	IMP	INCP 3sN	
(a)	/ab/ L	àb-b	àb-b	àð	àð	'sit'
(b)	/kaʃ/ H	káʃ-ʃ	kâʃ-ʃ	káé	káé	'bring'
(c)	/cig/ M	cīg-g	cīg-g	cīī	cīī	'wear'
(d)	/cuð/ M	cūð-ð	cūð	cūð-ú	cūð	'climb'
(e)	/lɔf/ L	lòf-f	lòf	lòf	lòf	'do magic'
(f)	/las/ M	lās-s	lās	lās	lās	'roll-up'
(g)	/ɲam/ M	ɲām-m	ɲām	ɲām	ɲām	'break'
(h)	/gɔn/ L	gòn-n, gòð	gòn-(ð)	gòn, gòð	gòn, gòð	'grab'
(i)	/guɲ/ L	gùɲ-ɲ	gùɲ	gùɲ-ū	gùɲ	'agree'
(j)	/mal/ M	māl-l	māl	māl	māl	'gather'
(k)	/wer/ M	wēr-r	wēr	wēr	wēr	'watch'

	Root	INF	SBJV 1sN	IMP	INCP 3sN	
(l)	/ɲaw/ H	ɲáw-w	ɲáɔ̃-n	ɲáɔ̃-(n)	ɲáɔ̃-(n)	‘request’
(m)	/kɔy/ H	kóy-y	kóɛ̃-n	kóɛ̃-(n)	kóɛ̃-(n)	‘cook’
(n)	/fɛð/ H	fɛ̃ð-ð	f ɛ̃ð	fɛ̃ð	fɛ̃ð-(n)	‘release’
(o)	/pa/ M	pā-ɖ	pā-ɖ	pāā	pāā, pāɖ	‘guard’
(p)	/bɛɛ/ L	bèè	bèè-n	bèè-nā	bèè-(n)	‘say’

Other incomplete forms with lengthened root vowel are shown in (26).

(26) **Incomplete verbs with lengthened vowels**

Root	INCP 3sN	
/nag/ M	nāā	‘sleep’
/bag/ L	bāā	‘take’
/cag/ H	cāā	‘bathe’
/ɟag/ M	ɟāā	‘mix’
/cig/ M	cīī	‘wear’
/cug/ H	cúú	‘send’
/gug/ L	gùū	‘vomit’

9.6.1 Incomplete as habitual

In Gaahmg, there is no form used exclusively for habitual actions. Rather, habitual actions are described using either the incomplete or continuous, the continuous form being the more common. For some verbs, such as ‘sleep’, there is more than one form possible to describe habitual action: *nāā* (incomplete) and *nāan* (continuous). For other verbs, the choice of incomplete or continuous form for habitual action is based on the semantics of the verb. More study is needed to determine semantic groupings that predict the correct habitual verb form.

Examples of incomplete verbs used for habitual action are given in (27) and examples of continuous verbs for habitual action will be given in 9.7.

(27) **Verbs using incomplete form for habitual action**

Root	INCP 3sN	
/nag/ M	nāā	‘sleep’
/gal/ L	gāl	‘run’
/kar/ M	kār	‘run’
/kɔr/ H	kór	‘speak’
/war/ H	wár	‘take’
/ab/ L	àɔ̃	‘sit’
/cur/ H	cúr	‘tie’

9.6.2 Incompletive as future

All verbs can use the incompletive form for future actions from the time of speaking. To refer explicitly to the future, tone is altered on the subject pronoun. There is no future marking on the verb itself; the incompletive future has the same segmental and tonal form as other incompletives.

Future incompletive paradigms are given in (28). In first and second person subject pronouns, Mid tone is assigned along with High tone on the final syllable, resulting in falling tone. In the third singular nominative pronoun, the Mid tone is changed to High. With third plural certain future verbs, the third singular nominative pronoun with High tone is also used, and the third plural subject pronoun optionally precedes it.

(28) Future incompletive paradigms

(a) 'will run'			(b) 'will bury the egg'		
ā	gāl	1sN	ā	ḍūr	kólóḍ = ṡ 1sN
ō,	ū = gəl	2sN	ō,	ū = ḍūr	kólóḍ = ṡ 2sN
é	gāl	3sN	é	ḍūr	kólóḍ = ṡ 3sN
āggā	gāl	1pN	āggā	ḍūr	kólóḍ = ṡ 1pN
ōggō,	ūggū = gəl	2pN	ōggō,	ūggū = ḍūr	kólóḍ = ṡ 2sN
(ēggā) é	gāl	3pN	(ēggā) é	ḍūr	kólóḍ = ṡ 3pN
PRON	run.		PRON	bury.	egg=DEF
	INCP			INCP	

9.7 Continuous

Continuous verb forms are used for actions that are ongoing, or continue over time, and are not completed at the time of speaking. The past continuous form is used for ongoing actions at a reference point in the past, whereas the non-past continuous form is used for ongoing actions that are still continuing at the time of speaking. Although the incompletive form alone can imply that the action is ongoing, using the continuous non-past form makes the continuous action overt.

Continuous past verbs are commonly used in background clauses of narratives, as in (29a). Continuous non-past verbs are used in expository and hortatory texts, as in (b). Both are used in direct speech and conversations (c) and both are used habitually (b, d).

(29) Continuous examples

(a)	bāárg = á	áǎ-ǎ`n	àn-ân	è	jǒgg	gǒǒr = ē
	Baggara = DEF	coming-	staying-	with	people	Goor = ACM
		CONT.P	CONT.P			

'The Baggara were coming with the people of Goor.' (Minj4)

- (b) tāl $\acute{\epsilon}$ fáá-gg $\acute{\epsilon}$ fáá-gg ; āw-ān $\acute{\epsilon}$ bùggōṅ
 create. GP line-PL GP line-PL /āb/sit- GP group.PL
 INCP.3pN CONT.N.3p
 ‘They create lines; they usually sit in groups.’ (Tifa8-9)
- (c) $\text{mīi} = \text{n}$ \acute{a} gāf-ān ḵōgg $\text{fāṅ} = \text{ān}$ \bar{a} $\text{nóm-ḍ} = \text{ūggò}$
 goat = 1sN give/- people old = DAT SBJV /nām/eat-
 DEF CONT.N SBJV = IPF.3p
 ‘The goat I am giving to the old men to eat.’ (Jooj12)
- (d) $\text{ú} = \text{ṅl}$ $\text{gār} = \bar{a}$ súūgg īlg $\acute{\epsilon}$ gārā $\text{fēḍ-ān} = \acute{a}$ $\text{jègg} = \bar{a}$
 2pN = place = market in where placed things =
 know DEF DEF
 /ṅél/INCP /fēḍ/-CONT.P = PAS
 ‘Do you know the place in the market in Faaz where things
 were placed (down for selling)?’ (Fan27)

Whereas the incomplete has no suffix, the continuous form attaches the suffix $-\text{Ān}$ to the root, where Ā is a back [-round] vowel. Continuous past and non-past forms differ only by different underlying tone on the suffix: H for non-past continuous and MH for past continuous.

Table 38: Incomplete suffix

	CONT.N	CONT.P
All root-final segments	$-\text{Ān}$	$-\text{Ān}$

Continuous non-past paradigms are shown in (30). When the non-future set of subject pronouns, which are underlined in (30), is used with continuous non-past verbs, the continuous action has already begun. When the future set of pronouns is used with continuous non-past verbs, the continuous action will begin soon or in some cases has already begun. Second person subject pronouns are optionally

(30) **Continuous non-past paradigms**

- (a) ‘running’
- | | | |
|---|---------------------------|-----|
| \acute{a}, \bar{a} | gāl-ān | 1sN |
| $\acute{u}, \bar{u}, \acute{u}$ | $\bar{u} = \text{gāl-ān}$ | 2sN |
| $\bar{e}, \acute{\epsilon}$ | gāl-ān | 3sN |
| $\underline{\text{āggā}}, \text{āggā}$ | gāl-ān | 1pN |
| $\underline{\text{ōggō}}, \text{ōggō},$ | | |
| $\underline{\text{ūggū}}, \text{ūggū}$ | gāl-ān | 2pN |
| $\bar{e}\text{ggā}$ | gāl-ān | 3pN |
| PRON | run. | |
| | CONT.N | |
- (b) ‘burying the egg’
- | | | | |
|---|---------------------------|----------------------------|-----|
| \acute{a}, \bar{a} | ḍūr-ān | $\text{kólód} = \acute{a}$ | 1sN |
| $\acute{u}, \bar{u}, \acute{u}$ | $\bar{u} = \text{ḍūr-ān}$ | $\text{kólód} = \acute{a}$ | 2sN |
| $\bar{e}, \acute{\epsilon}$ | ḍūr-ān | $\text{kólód} = \acute{a}$ | 3sN |
| $\underline{\text{āggā}}, \text{āggā}$ | ḍūr-ān | $\text{kólód} = \acute{a}$ | 1pN |
| $\underline{\text{ōggō}}, \text{ōggō},$ | | | |
| $\underline{\text{ūggū}}, \text{ūggū}$ | ḍūr-ān | $\text{kólód} = \acute{a}$ | 2sN |
| $\bar{e}\text{ggā}$ | ḍūr-ān | $\text{kólód} = \acute{a}$ | 3pN |
| PRON | bury. | $\text{egg} = \text{DEF}$ | |
| | CONT.N | | |

[+/- ATR] regardless of the [ATR] quality of the root vowel.

As shown in (31), continuous past forms are the same as continuous non-past forms except for tone. Both sets of subject pronouns (future and non-future) may precede continuous past forms, although there is no difference in meaning—both mean an action that continued before the time of the utterance.

(31) **Continuous past paradigms**

(a) ‘was running’				(b) ‘was burying the egg’			
á, â	gàl-ân	1sN		á, â	ḍùr-ân	kólólḍ = ḍ	1sN
ḥ, ḥ̄, ú, ū = gəl-ân		2sN		ḥ, ḥ̄, ú, ū = ḍùr-ân		kólólḍ = ḍ	2sN
ē, é	gàl-ân	3sN		ē, é	ḍùr-ân	kólólḍ = ḍ	3sN
āggá, āggā	gàl-ân	1pN		āggá, āggā	ḍùr-ân	kólólḍ = ḍ	1pN
ōggó, ōggō,				ōggó, ōggō,			
ūggú, ūggū = gəl-ân		2pN		ūggú, ūggū = ḍùr-ân		kólólḍ = ḍ	2sN
ēggā	gàl-ân	3pN		ēggā	ḍùr-ân	kólólḍ = ḍ	3pN
PRON	run.			PRON	bury.	egg=DEF	
	CONT.N				CONT.N		

In (32), continuous past forms are shown with various root-final segments. In (a-b), root-final *b, ɸ* are weakened to approximants {P1a} and in (c), *g* is elided {P2}. The suffix is attached to vowel-final roots such as in (o), as a second syllable juxtaposed to the first, in accordance with {M2} in 3.1. In the continuous verb with root /kɔ/ ‘call’, the suffix vowel remains unrounded (*kɔ̄-ân*). Continuous forms optionally attach the suffix *-CAn³⁴*, where *C* assimilates to the root-final consonant which then surfaces as a single unweakened segment. Forms with root-final *w, y, ɔ̄* as in (l-n) optionally attach the suffix *-nAn*. Some forms with root-final vowel such as in (p) also take this suffix.

(32) **Continuous past forms with various root-final segments**

Root	CONT.P 3SN		
(a) /ab/ L	àw-ân	àb-bán [àbán]	‘sit’
(b) /kaɸ/ H	káy-ân	káɸ-ján [káɸán]	‘bring’
(c) /cig/ M	cí-ân	cīg-gón [cígón]	‘wear’
(d) /cuḍ/ M	cūḍ-ún	cūḍ-ḍún [cūḍún]	‘climb’
(e) /lɔf/ L	lòf-ân	lòf-fán [lòfán]	‘do magic’
(f) /las/ M	lās-ân	lās-sán [lāsán]	‘roll-up’
(g) /ɲam/ M	ɲām-ân	ɲām-mán [ɲāmán]	‘break’
(h) /gɔn/ L	gòn-ân	gòn-nán [gònnán]	‘grab’

³⁴ The continuous form with suffix *-CAn* could be a shorten form of the deictic continuous form with suffix *-(CA)gAn* shown in (52) of 9.9, as the verbs in these forms are similar or identical.

	Root	CONT.P 3sN		
(i)	/gʊn/ L	gùṇ-án	gùṇ-ṇón [gùṇón]	‘agree’
(j)	/mal/ M	māl-án	māl-lán [mālán]	‘gather’
(k)	/wer/ M	wēr-án	wēr-rán [wērán]	‘watch’
(l)	/ṇaw/ H	ṇáv-án	ṇáó-nán	‘request’
(m)	/kɔy/ H	kóy-án	kóé-nán	‘cook’
(n)	/fəð/ H	fěð-án	fěð-nán	‘release’
(o)	/pa/ M	pā.-án		‘guard’
(p)	/bɛɛ/ L		bèè-nán	‘say’

As shown in (29b,d), continuous non-past and past can both be used for habitual actions. Some examples in non-past form are listed in (33).

(33) Verbs using continuous non-past form for habitual action

Root	CONT.N 3sN		Root	CONT.N 3sN	
(a) /ḍaf/	ḍàf-án	‘beat’	(h) /cig/	cī-ín	‘wear’
(b) /gaf/	gàf-án	‘give’	(i) /ṭif/	ṭīf-ón	‘tie’
(c) /mag/	mā-án	‘drink’	(j) /ṭir/	ṭír-ón	‘kill’
(d) /fɛj/	fěy-én	‘clean’	(k) /cug/	cú-ún	‘send’
(e) /nag/	nā-án	‘sleep’	(l) /lɛg/	lē-én	‘come’
(f) /ku/	kū-ún	‘build’	(m) /bɛl/	bél-án	‘call’
(g) /nag/	ná-án	‘read’	(n) /mər/	mór-ón	‘sell’

9.8 Verb stem tone assignment

We now present the tone of all inflectional verb forms presented thus far, although not all in the same order as in previous sections. The verb stem suffixes discussed to this point have no underlying tone except for the past continuous suffix $-\underline{A}n$ with MH tone, the non-past continuous suffix $-\underline{A}n$ with High tone, and the imperative suffix $-\underline{A}$ with High tone which attaches to a few imperative verbs.

Table 39: Verb stem suffixes

SBJV 1sN, 2sN	-CA, -ḍA
SBJV 3sN, 1pN, 2pN, 3pN	-ḍA
IMP	-\underline{A}
IMP.PL	-ḍ ⁺ A
COMP	-sA
CONT.P	-\underline{A}n
CONT.N	-\underline{A}n

In all finite verb forms, Mid tone is assigned to the stem-final syllable of first and second person forms, High tone is assigned to the stem-final syllable of third singular verbs, and Low tone is assigned to the stem-final syllable of third plural verbs. Thus, although many of the inflectional verb suffixes have no underlying

tone, tone is assigned to the suffixes according to these tonal inflections for subject person agreement.

Table 40: Subject person inflectional tone

	1sN	2sN	3sN	1pN	2pN	3pN
Root tone	+M	+M	+H	+M	+M	+L

9.8.1 Infinitive tone

Underlying tone surfaces unchanged in infinitive verbs, and such forms do not inflect for person by tone changes. The same seven tone melodies as in 9.1 are presented here for reference.

(34) Tonal contrasts in infinitive verb forms

	Root tone	INF	
(a)	H	fīr-r	‘smell, pray’
(b)	M	cōr-r	‘help’
(c)	L	ḡūr-r	‘bury’
(d)	HL	pâr-r	‘attach’
(e)	HM	bêl-l	‘name, call’
(f)	ML	dōḡs-s	‘stand’
(g)	MH	kăḡ-ḡ	‘strike, ram’

9.8.2 Completive tone

In (35), first singular, third singular, and third plural subject completive forms with various root tone melodies are compared. Mid tone assigned to the suffix in first singular forms becomes Low when following Low tone, as in (c,d,f). High tone assigned to the suffix in third singular forms becomes Mid when following Low tone in (c,d,f). These processes are in accordance with the tone lowering rule {M9} of 3.4.3. Low tone assigned to the suffix in third plural forms causes the root Low tone melody of (c) to become Mid, in accordance with the raising rule {M8} of 3.4.2. In (e), the Mid tone of the HM root tone becomes Low in accordance with the lowering rule {M7} of 3.4.2.

(35) Completive forms with various root tone melodies

	Root tone	COMP 1sN	COMP 3sN	COMP 3pN	
(a)	H	fīr-sṵ	fīr-sṵ	fīr-sṵ	‘smell’
(b)	M	cōr-sṵ	cōr-sṵ	cōr-sṵ	‘help’
(c)	L	ḡūr-sṵ	ḡūr-sṵ	ḡūr-sṵ	‘bury’
(d)	HL	pâr-sṵ	pâr-sṵ	pâr-sṵ	‘attach’
(e)	HM	bêl-ḡā	bêl-ḡā	bêl-ḡā	‘name’
(f)	ML	dōḡs-sṵ	dōḡs-sṵ	dōḡs-sṵ	‘stand’
(g)	MH	kăḡ-sṵ	kăḡ-sṵ	kăḡ-sṵ	‘strike’

9.8.3 Subjunctive tone

Subjunctive tone assignment as in (36) is the same as in completive forms except that roots with Mid tone melodies as in (b) are replaced by High tone for unknown reasons. Suffix Mid tone in first singular and second plural forms assimilates to root-final Low tone {M9}, as in (c,d,f). Suffix High tone in third singular forms becomes Mid when following Low tone {M9} in (c,d,f). Suffix Low tone in third plural forms causes the root Low tone of (c) to become Mid {M8}, and in (e) the Mid tone of the HM root tone becomes Low {M7}.

(36) Subjunctive forms with various root tone melodies

	Root tone	SBJV 1sN	SBJV 2pN	SBJV 3sN	SBJV 3pN	
(a)	H	f̃r	f̃r-r̃	f̃r-r̃	f̃r-r̃	‘smell’
(b)	M	c̃r	c̃r-r̃	c̃r-r̃	c̃r-r̃	‘help’
(c)	L	ḍr	ḍr-r̃	ḍr-r̃	ḍr-r̃	‘bury’
(d)	HL	p̃r	p̃r-r̃	p̃r-r̃	p̃r-r̃	‘attach’
(e)	HM	bēl	bēl-ḍ̃	bēl-ḍ̃	bēl-ḍ̃	‘name’
(f)	ML	d̃ḍs-ḍ̃	d̃ḍḍ-ḍ̃	d̃ḍḍ-ḍ̃	d̃ḍḍ-ḍ̃	‘stand’
(g)	MH	k̃ḍ̃	k̃ḍ̃-ḍ̃	k̃ḍ̃-ḍ̃	k̃ḍ̃-ḍ̃	‘strike’

9.8.4 Incompletive tone

Tone assignment for incompletive forms is mostly the same as for completive and subordinate forms. First singular Mid tone assimilates to root-final Low tone {M9}, as in (c,d,f). Third singular High tone becomes Mid when following Low tone {M9} in (c,f). Third plural Low tone causes the root Low tone melody of (c) to become Mid {M8}, and in (e) the Mid tone of the HM root tone becomes Low {M7}. For unknown reasons, final High tone in third singular forms with Mid root tone melody as in (b) does not surface. However, when a vowel-initial clitic with no underlying tone is attached such as the second person object pronoun =*O*, the clitic surfaces with High tone (*c̃r* = *ʃɔn*). When the third singular High tone is added to incompletive forms with HL root tone melody, the combination HLH tone surfaces as HMH tone in accordance with the combination rule {M10} in 3.4.4.

(37) Incompletive forms with various root tone melodies

	Root tone	INCP 1sN	INCP 3sN	INCP 3pN	
(a)	H	f̃r	f̃r	f̃r	‘smell’
(b)	M	c̃r	c̃r	c̃r	‘help’
(c)	L	ḍr	ḍr	ḍr	‘bury’
(d)	HL	p̃r	p̃r	p̃r	‘attach’
(e)	HM	bēl	bēl	bēl	‘name’
(f)	ML	d̃ḍs	d̃ḍs	d̃ḍs	‘stand’
(g)	MH	k̃ḍ̃	k̃ḍ̃	k̃ḍ̃	‘strike’

9.8.5 Imperative tone

Tone assignment of the singular imperative is the same as the root tone, although when the suffix *-Á* is added to some singular imperatives, it has High tone which becomes Mid following preceding Low {M9}, as in (38f). Final Mid tone is assigned to imperative plural forms but assimilates to the preceding Low {M9} in (c,d,f). Like the subjunctive, in imperative plural forms with Mid root tone melodies as (b), the root tone is replaced by High tone.

(38) Imperative forms with various root tone melodies

	Root tone	IMP	IMP.PL	
(a)	H	fír-ḑ	fír-rḑ	‘smell’
(b)	M	cṵr	cúr-rū	‘help’
(c)	L	ḑùr	ḑùr-rù	‘bury’
(d)	HL	pâr	pâr-rè	‘attach’
(e)	HM	bél-á	bíl-ḑḑ	‘name’
(f)	ML	dṵṵs-ṵ	dūùḑ-ḑù	‘stand’
(g)	MH	kṵḑ-ḑ	kṵḑ-ḑḑ	‘strike’

9.8.6 Continuous past tone

In tone assignment of continuous forms, some of the same rules as well as additional rules apply. Although a few rules account for tone assignment in nearly all continuous forms, when and how they apply is less predictable. In (39), the continuous past forms with various root tone melodies are shown together for comparison, but each of the three person forms are dealt with separately in following paragraphs in order to demonstrate the applications of all rules. When an object pronoun attaches to verbs with HL and ML root tone melodies as in (d,f), different tone results on the continuous past suffix than when there is no object pronoun.

(39) Continuous past forms *-Án* (MH) with various root tone melodies

	Root tone	CONT.P 1sN	CONT.P 3sN	CONT.P 3pN	
(a)	H	fír-ḑ̃ n	fír-ṵn	fír-ḑ̃ n	‘smell’
(b)	M	cṵr-ān	cṵr-án	cṵr-ān	‘help’
(c)	L	ḑùr-ṵn	ḑùr-ṵn	ḑùr-ṵn	‘bury’
(d)	HL	pór-ṵn	pór-ṵn	pór-ḑ̃ n	‘attach’
		pór-ṵn = ī	pór-ṵn = ī	pór-ṵn = ì	‘attach it’
(e)	HM	bél-á̃ n	bél-ān	bél-á̃ n	‘name’
(f)	ML	dṵṵs-ān	dṵṵs-ān	dṵṵs-ā̃ n	‘stand’
		būn-ḑ̃-ṵn = ī	būn-ḑ̃-ṵn = ī	būn-ḑ̃-ṵn = ì	‘make it big’
(g)	MH	kṵḑ-ḑ̃ n	kṵḑ-ṵn	kṵḑ-ḑ̃ n	‘strike’

In the first singular continuous past forms of (40), the Mid tone morpheme is assigned to the end of the continuous suffix *-Án* (MH) to become *-Á̃n* (MHM). In

(c,d,f), the initial Mid tone of the suffix $-\tilde{A}n$ assimilates to the preceding Low tone {M9} and unites with it. In (d,f), the resulting L-HM tone then becomes L-M {M9}, or in (d) when the third singular object clitic $=E$ with no underlying tone is attached, the resulting HL-HM becomes H-MHM {M10}. In (f), when the third singular object clitic is attached, the underlying tone surfaces unchanged.

(40) **First singular past continuous $-\tilde{A}n$ (MHM) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.P 1SN	
(a)	H	H-MHM>H-MHM		fīr-r	fīr- $\tilde{A}n$	‘smell’
(b)	M	M-MHM>M-HM		cōr-r	cōr- $\tilde{A}n$	‘help’
(c)	L	L-MHM>L-HM	L-M>L-L	ḡūr-r	ḡūr- $\tilde{A}n$	‘bury’
(d)	HL	HL-MHM>HL-HM	L-M>L-L;	pār-r	pār- $\tilde{A}n$	‘attach’
		>H-LM	L-H>L-M			
		HL-MHM>HL-HM	L-M>L-L;			
		>H-MHM	HLH>HMH		pār- $\tilde{A}n = \bar{i}$	‘attach it’
(e)	HM	HM-MHM>H-MHM		bēl-l	bēl- $\tilde{A}n$	‘name’
(f)	ML	ML-MHM>	L-M>L-L;	dōs-s	dōs- $\tilde{A}n$	‘stand’
		ML-HM>				
		ML-LM	L-H>L-M			
		ML-MHM>				
(g)	MH	ML-MHM		būṇ-ḡ	būṇ-ḡ- $\tilde{A}n = \bar{i}$	‘make it big’
		MH-MHM>		kōḡ-ḡ	kōḡ- $\tilde{A}n$	‘strike’
		MH-MHM				

In High-initial two tone root melodies such as (40d-e), the second tone of the melody surfaces on the suffix, delinked from the root. However, in other root melodies, the root tones remain assigned to the root. When three tones surface on the past continuous suffix such as in (a,e,g), High tone is lowered to ‘half High’ pitch, being one of three tones on a mid weight syllable, similar to tone of the accompaniment clitic $=\tilde{E}$ described in 7.6.2.

In the third singular forms of (41), High tone is assigned to the end of the continuous suffix $-\tilde{A}n$ (MH), which already has final High tone. In (c,d,f), the initial Mid tone of the suffix $-\tilde{A}n$ assimilates to the preceding Low tone {M9}. In (d), the resulting H-LH becomes H-MH {M10} when the third singular object $=\tilde{E}$ with HM tone is attached, and in (f), the underlying tone surfaces unchanged when the third singular object is attached.

(41) **First third past continuous $\text{-}\hat{A}n$ (MH) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.P	
					3sN	
(a)	H	H-MH>H-MH		fír-r	fír-ǎn	‘smell’
(b)	M	M-MH>M-H		cǝr-r	cǝr-án	‘help’
(c)	L	L-MH>L-H	L-M>L-L	ǵùr-r	ǵùr-ǎn	‘bury’
(d)	HL	HL-MH>H-LH	L-M>L-L	pǝr-r	pǝr-ǎn	‘attach’
		HL-MH>H-LH >H-MH	L-M>L-L; HLH>HMH	pǝr-r	pǝr-ǎn = ǐ	‘attach it’
(e)	HM	HM-MH>H-MH		bél-l	bél-án	‘name’
(f)	ML	ML-MH>ML-LH	L-M>L-L	dǝǝs-	dǝǝs-án	‘stand’
		ML-MH>ML-MH		s bũn-ǵ	bũn-ǵ- ǎn = ǐ	‘make it big’
(g)	MH	MH-MH>MH-MH		kǝǝ-ǝ	kǝǝ-ǎn	‘strike’

In the third plural forms of (42), Low tone is assigned to the end of the continuous suffix to become $\text{-}\hat{A}n$ (MHL). In (c,d,f), the initial Mid tone of the suffix $\text{-}\hat{A}n$ assimilates to the preceding Low {M9}. In (d), the resulting H-LHL tone becomes H-LML in accordance with the combination rule {M11} in 3.4.4, or the tone becomes H-MHL {M10} when the third singular object clitic =E with no underlying tone is attached. In (f), the LHL tone also becomes LML {M11}, or the underlying tone surfaces unchanged when the third singular object is attached.

(42) **Third plural past continuous $\text{-}\hat{A}n$ (MHL) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.P	
					3pN	
(a)	H	H-MHL>H-MHL		fír-r	fír-ǎ n	‘smell’
(b)	M	M-MHL>M-HL		cǝr-r	cǝr-án	‘help’
(c)	L	L-MHL>L-HL	L-M > L-L	ǵùr-r	ǵùr-ǎn	‘bury’
(d)	HL	HL-MHL>H-LHL	L-M > L-L;	pǝr-r	pǝr-ǎ n	‘attach’
		>H-LML	LHL > LML			
		HL-MHL>H-LHL >H-MHL	L-M > L-L; HLH > HMH			
(e)	HM	HM-MHL> HM-MHL		bél-l	bél-ǎ n	‘name’
(f)	ML	ML-MHL> ML-LHL> ML-LML	L-M > L-L; LHL > LML	dǝǝs- s	dǝǝs-ǎ n	‘stand’
		ML-MHL> ML-MHL				
		ML-MHL> MH-MHL				
(g)	MH	MH-MHL> MH-MHL		kǝǝ-ǝ	kǝǝ-ǎ n	‘strike’

9.8.7 Continuous non-past tone

In (43), continuous non-past forms with various root tone melodies are shown together for comparison, and each of the three person forms are dealt with separately in following paragraphs. In each of the three forms, a new assimilation rule is used: M-H>M-M, which states that High suffix tone assimilates to preceding Mid. However, the rule only applies in forms with HM root tone melodies as in (e) and not in forms with Mid root tone melody as in (b). Thus, the assimilation rule is more of an exception than a rule, and for this reason is not included in the morphophonological rules of chapter 3. Where it applies in the derivations to follow, it is marked with a diamond (◊) to distinguish it from the regular morphophonological rules.

(43) Continuous non-past forms $\underline{\hat{A}}n$ (H) with various root tone melodies

	Root tone	CONT.N 1SN	CONT.N 3sN	CONT.N 3pN	
(a)	H	fír-ṣn	fír-ón	fír-ên	‘smell’
(b)	M	cōr-ān	cōr-án	cōr-ân	‘help’
(c)	L	ḍùr-èn	ḍùr-ḙn	ḍùr-ên	‘bury’
(d)	HL	pór-èn	pór-ḙn	pór-ên	‘attach’
(e)	HM	bél-ān	bél-ān	bél-ân	‘name’
(f)	ML	dṣṣs-ān	dṣṣs-ān	dṣṣs-ân	‘stand’
(g)	MH	kṣṣ-ṣn	kṣṣ-ón	kṣṣ-ên	‘strike’

In the first singular continuous past forms of (44), the Mid tone morpheme is assigned to the end of the continuous suffix $\underline{\hat{A}}n$ (H) to become $\underline{\hat{A}}n$ (HM). In (c,d,f), the initial High tone of the suffix $\underline{\hat{A}}n$ becomes Mid {M9}. In (c,d), the resulting L-M tone then becomes L-L {M9}, where the same rule applies twice to the same verb forms. As mentioned, the initial High tone of the suffix assimilates to the preceding Mid tone of HM root tone melodies {◊} as in (e), but not to the root Mid tone of (b). As in continuous past forms, in (44d-e), the second tone of the root

(44) First singular non-past continuous $\underline{\hat{A}}n$ (HM) with various root tone melodies

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.N 1SN	
(a)	H	H-HM>H-HM		fír-r	fír-ṣn	‘smell’
(b)	M	M-HM>M-HM		cōr-r	cōr-ān	‘help’
(c)	L	L-HM>L-M >L-L	L-H>L-M; L-M>L-L	ḍùr-r	ḍùr-ḙn	‘bury’
(d)	HL	HL-HM>HL-M >H-L	L-H>L-M; L-M>L-L	pâr-r	pór-èn	‘attach’
(e)	HM	HM-HM>H-M	M-H>M-M ◊	bél-l	bél-ān	‘name’
(f)	ML	ML-HM>ML-M	L-H>L-M	dṣṣs-s	dṣṣs-ān	‘stand’
(g)	MH	MH-HM>MH-MH		kṣṣ-ṣ	kṣṣ-ṣn	‘strike’

melody surfaces on the suffix and delinks from the root, but in (f-g), the root melody remains assigned to the root.

In the third singular forms of (45), High tone is assigned to the end of the continuous suffix $-\hat{A}n$, which already has High tone. In (c,d,f), the High tone of the suffix $-\hat{A}n$ becomes Mid {M9}. For unknown reasons, the resulting L-M tone does not become L-L by a second application of {M9} as in the verbs of (44c,d). Again the initial High tone of the suffix assimilates to the preceding Mid tone { \diamond } in (e) but not in (b).

(45) **Third singular non-past continuous $-\hat{A}n$ (H) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.N 3sN	
(a)	H	H-H>H-H		fír-r	fír-ən	‘smell’
(b)	M	M-H>M-H		cɔ̃r-r	cɔ̃r-án	‘help’
(c)	L	L-H>L-LM	L-H>L-M	ḍùr-r	ḍùr-ən	‘bury’
(d)	HL	HL-H>H-LM	L-H>L-M	pâr-r	pâr-ən	‘attach’
(e)	HM	HM-H>H-M	M-H>M-M \diamond	bél-l	bél-án	‘name’
(f)	ML	ML-H>ML-M	L-H>L-M	dɔ̃ðs-s	dɔ̃ðs-án	‘stand’
(g)	MH	MH-H>MH-H		kɔ̃ð-ð	kɔ̃ð-ən	‘strike’

In the third plural forms of (46), Low tone is assigned to the end of the continuous suffix $-\hat{A}n$ to become $-\hat{A}n$ (HL). In (c,d,f), the initial High tone of the suffix $-\hat{A}n$ becomes Mid {M9}. In (d, f), Mid tone of the resulting HL-ML tone assimilates to the preceding Low {M9}, where the same rule applies twice to the same verb forms. In (c), the root Low tone is raised to Mid {M8}. The initial High tone of the suffix assimilates to the preceding Mid tone { \diamond } in (e) but not in (b).

(46) **Third plural non-past continuous $-\hat{A}n$ (HL) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.N 3pN	
(a)	H	H-HL>H-HL		fír-r	fír-ən	‘smell’
(b)	M	M-HL>M-HL		cɔ̃r-r	cɔ̃r-án	‘help’
(c)	L	L-HL>L-ML >M-ML	L-H>L-M; L-L>M-L	ḍùr-r	ḍùr-ən	‘bury’
(d)	HL	HL-HL>HL-ML >H-L	L-H>L-M; L-M>L-L	pâr-r	pâr-ən	‘attach’
(e)	HM	HM-HL>H-ML	M-H>M-M \diamond	bél-l	bél-án	‘name’
(f)	ML	ML-HL>ML-ML >ML-L	L-M>L-L L-M>L-L	dɔ̃ðs-s	dɔ̃ðs-án	‘stand’
(g)	MH	MH-HL>MH-HL		kɔ̃ð-ð	kɔ̃ð-ən	‘strike’

9.9 Deictic

Direction and distance can be indicated morphologically in the verb by a deictic suffix. The suffix indicates that the action happens at a distance from the speaker, or the action happens towards the speaker. The meaning is ‘(Subject) will go and do X’ or ‘(Subject) comes while doing X’. In (47a-b), a comparison is given between the common incomplete and the deictic incomplete, and in (c-d) between the imperative and deictic imperative.

(47) Incomplete with and without deictic

- (a) ā kóm gùḏū ‘I will chop.INCP a tree.’
 (b) ā kóm-**gōn** gùḏū ‘I will chop-INCP.D a tree.
 (I will go far and chop a tree.)’
 (c) wár fēgg bígg ē ḏòṇē ‘Take water some there with you.’
 (d) wár-**rāggā** fēgg bígg ē ḏòṇē ‘Take-IMP.D water some there with you.
 (Bring some water with you.)’

- (48) lōḡ ē mā-**ḏāggā** fēgg = á bēḏér-r
 until 3sN drank-COMP.D water = DEF satisfied-INF
 ‘He went and drank until he was satisfied.’ (Goat12-13)

Table 41 lists the suffixes for various deictic verb forms. Segments in parentheses are optionally elided in verbs with most root-final segments.

Table 41: Deictic suffixes

COMP.D	CONT.P.D	CONT.N.D	IMP.D	IMP.PL.D
-CÁggĀ	-(CAAg)gAn	-(CAG)gAn	-(CÁg)gĀ	-ḏúū

Like the infinitive, the deictic completive suffix -CÁggĀ does not change according to person forms of the verb. Second person forms with this suffix do not become [+ATR] as they do in finite verb forms, and there is no person inflection with tone changes. However, the continuous past deictic, continuous non-past deictic and

(49) Completive and past continuous distance paradigms

- (a) ‘drink’
- | | COMP | COMP.D | | CONT.P | CONT.P.D | |
|-----|-------|----------|--------|---------|-------------|-----|
| ā | mā-sā | mā-ḏāggā | á | kóm-ā̃n | kóm-māāggān | 1sN |
| ō | mō-sō | mā-ḏāggā | ó, ú = | kúm-ō̃n | kúm-mōōggōn | 2sN |
| ē | mā-sá | mā-ḏāggā | ē | kóm-ā̃n | kóm-māāggān | 3sN |
| àgg | mā-sā | mā-ḏāggā | āgg | kóm-ā̃n | kóm-māāggān | 1pN |
| ògg | mō-sō | mā-ḏāggā | ógg, | kúm-ō̃n | kúm-mōōggōn | 2pN |
| | | | ūgg = | | | |
| ègg | mā-sà | mā-ḏāggā | ēggā | kóm-ā̃n | kóm-māāggān | 3pN |
- (b) ‘chop’

imperative deictic verbs do change according to person forms of the verb.

(50) **Continuous non-past distance paradigm ‘chop’**

	CONT.N	CONT.N.D	
ā	kóm-ān	kóm-gōn	1sN
ō, ū =	kúm-ōn	kúm-gūn	2sN
é	kóm-án	kóm-gón	3sN
āggā	kóm-ān	kóm-gōn	1pN
ōggō, ūggū =	kúm-ōn	kúm-gūn	2pN
ēggā	kóm-ān	kóm-gōn	3pN

(51) **Imperative distance verbs**

IMP	IMP.D	IMP.PL	IMP.PL.D	
kóm	kóm-gō	kúm-dū	kúm-ḍ-ūū	‘chop’
māā	mā-ḍāggā	mó-ḍ	mō-ḍ-ūū	‘drink’

In (52), third singular forms are shown with the deictic completive suffix *-CÁggĀ* and deictic continuous non-past suffix *-(CÁg)gĀn* attached to verb roots with various final segments. The continuous forms are optionally shortened in verbs with many root-final segments. The initial consonant of the suffixes takes on all the features of the root-final consonant and becomes *ḍ, n*, or does not surface when attached to vowel-final roots. Geminate segments surface as single segments.

(52) **Third singular deictic completive *-CÁggĀ* and continuous non-past *-(CÁg)gĀn* verbs**

	COMP.D 3SN	CONT.N.D 3SN	
(a) /ab/ L	àb-bāggā	àb-bāggán	‘sit’
(b) /kaɣ/ H	káj-jāggā	káj-jāggán	‘bring’
(c) /ciɡ/ M	cīg-gōggō	cīg-gōggón	‘wear’
(d) /cuḍ/ M	cūḍ-ḍúggū	cūḍ-ḍúggún	‘climb’
(e) /lɔf/ L	lòf-fōggō	lòf-fōggón	‘do magic’
(f) /las/ M	lās-sāggā	lās-sāggán	‘roll-up’
(g) /ɲam/ M	ɲām-māggā	ɲām-māggán	‘break’
(h) /ɡɔn/ L	gòn-nōggō	gòn-nōggón	‘grab’
(i) /ɡuɲ/ L	gùɲ-ɲūggū	gùɲ-ɲūggún	‘agree’
(j) /mal/ M	māl-lāggā	māl-lāggán	‘gather’
(k) /wer/ M	wēr-rāggā	wēr-rāggán	‘watch’
(l) /ɲaw/ H	ɲāw-wāggā	ɲāw-wāggán	‘request’
(m) /kɔy/ H	kóy-yōggō	kóy-yāggán	‘cook’
(n) /fɛð/ H	fěð-ðāggā	fěð-ðāggán	‘release’
(o) /pa/ M	pā-ḍāggā	pā-ḍāggán	pā-ḍán ‘guard’
(p) /bɛɛ/ L	bèè.-(n)āggā	bèè.-(n)āggán	‘say’

In (53), the deictic completive suffix *-CÁggĀ* with underlying HM tone and the deictic continuous non-past suffix *-CÁggĀn* with H tone is attached to verb roots with various tone melodies. Completive and continuous forms are shown for comparison. Suffix-initial High tone becomes Mid following Low {M9} in (c,d,f).

(53) **Third singular deictic completive *-CÁggĀ* and continuous non-past *-(Ág)gĀn* verb forms**

Root tone	COMP	COMP.D	CONT.N	CONT.N.D	
	3sN	3sN	3sN	3sN	
(a) H	fír-só	fír-óggō	fír-ón	fír-(óg)gón	‘smell’
(b) M	cōr-só	cōr-óggō	cōr-án	cōr-(óg)gón	‘help’
(c) L	ḍūr-sū	ḍūr-ūggū	ḍūr-ñn	ḍūr-(ūg)gún	‘bury’
(d) HL	pâr-sō	pâr-ōggō	pâr-ñn	pâr-(ōg)gón	‘attach’
(e) HM	bēl-ḍá	bēl-ággā	bēl-ān	bēl-(ág)gán	‘name’
(f) ML	dōðs-sō	dōðs-ōggō	dōðs-ān	dōðs-(ōg)gón	‘make-big’
(g) MH	kǎs-só	kǎð-óggō	kǎð-ón	kǎð-(óg)gón	‘strike’

Deictic imperative plural forms with suffix *-ūū* with HM tone have similar tone assignment.

(54) **Deictic imperative plural *-ūū* verb forms**

Root tone	IMP.PL	IMP.PL.D	
(a) H	fír-rē	fír-r-ūū	‘smell’
(b) M	cūr-rū	cūr-r-ūū	‘help’
(c) L	ḍūr-rū	ḍūr-r-ūū	‘bury’
(d) HL	pâr-rē	pâr-r-ūū	‘attach’
(e) HM	bīl-ḍē	bīl-ḍ-ūū	‘name’
(f) ML	dūūḍ-ḍū	dūūḍ-ḍ-ūū	‘make-big’
(g) MH	kǎḍ-ḍē	kǎḍ-ḍ-ūū	‘strike’

9.10 Antipassive verb forms

When a speaker uses a transitive verb and wants to indicate that an implied object is unknown or is intentionally not mentioned, he or she does so by attaching the antipassive suffix *-An* to the verb root. In (55a), the simple completive verb *pām-sá* ‘break’ is contrasted with the antipassive completive *pām-án-sá* in (b). For further examples, see 14.5.4 on verbal valency of transitive verbs.

(55a)	kāsá = n	pām-sá	gùlḍū	(b)	kāsá = n	pām-án-sá
	boy = DEF	/pam/break-	branch		boy = DEF	/pam/break-
		COMP				ANTIP-COMP
		‘The boy broke a branch.’				‘The boy broke something.’

9.10.1 Antipassive segmental morphology

The antipassive suffix *-An* attaches to the verb root before inflectional suffixes are added.

Table 42: Antipassive suffixes

Incompletive	-An
Subjunctive	-An, -An-dA
Completive	-An-sA
Continuous non-past	-An-An

In (56-57), antipassive paradigms are compared with non-antipassive verb paradigms.

(56) Antipassive completive and incompletive paradigms ‘break’

(a)	COMP	ANTIP COMP	(b)	INCP	ANTIP INCP	
á	ɲām-sā	ɲām-án-sā	ā	ɲām	ɲāām-án	1sN
ó, ú =	ɲōm-sō	ɲōm-ón-sō	ō, ū =	ɲōm	ɲōōm-ón	2sN
ē	ɲām-sá	ɲām-án-sá	é	ɲām	ɲāām-án	3sN
āgg	ɲām-sā	ɲām-án-sā	āggá	ɲām	ɲāām-án	1pN
ōgg,	ɲōm-sō	ɲōm-ón-sō	ōggō,	ɲōm	ɲōōm-ón	2pN
ūgg =			ūggú =			
ēggà	ɲām-sà	ɲām-án-sà	ēggà	ɲām	ɲāām-ân	3pN

(57) Antipassive subjunctive and continuous non-past paradigms

(a) ‘break’	SBJV	ANTIP SBJV	(b) ‘work’	CONT.N	ANTIP CONT.N	
ā	ɲám	ɲāām-án	ā	káám-àn	káám-àn-ān	1sN
ō,	ɲóm	ɲōōm-ón	ō,	kóóm-èn	kóóm-èn-ōn	2sN
ū =			ū =			
ē	ɲám-ɖá	ɲāām-án-ɖá	é	káám-àn	káám-àn-ān	3sN
ā	ɲám-ɖā	ɲāām-án-ɖā	āggá	káám-àn	káám-àn-ān	1pN
ō,	ɲóm-ɖō	ɲōōm-ón-ɖō	ōggó,	kóóm-èn	kóóm-èn-ōn	2pN
ū =			ūggú =			
ē	ɲám-ɖà	ɲāām-án-ɖà	ēggà	káám-àn	káám-àn-àn	3pN

In (58), third singular completive forms and third singular antipassive completive forms with suffix *-An-sA* are shown with various root-final segments. As in continuous forms, root-final *b, ʃ* are intervocalically weakened to approximants {P1a} and *g* is elided {P2} in (a-c). The antipassive and completive suffix takes the round feature of the root.

(58) **Antipassive completive -*An-sá***

	Root	COMP 3sN	ANTIP COMP 3sN	
(a)	/ab/ L	àð-sṵ	àw-ān-sá	‘sit’
(b)	/kaɣ/ H	káj-já	káy-ān-sá	‘bring’
(c)	/cig/ M	cīg-sṵ	cī.-ən-sṵ	‘wear’
(d)	/cuɖ/ M	cūs-sú	cūɖ-ún-sú	‘climb’
(e)	/lɔf/ L	lòf-sṵ	lòf-ən-sṵ	‘do magic’
(f)	/las/ M	lās-sá	lās-ān-sá	‘roll-up’
(g)	/ɲam/ M	ɲām-sá	ɲām-ān-sá	‘break’
(h)	/gɔn/ L	gṵs-sṵ	gṵn-ən-sṵ	‘grab’
(i)	/gɯɲ/ L	gṵɲ-sū	gṵɲ-ūn-sú	‘agree’
(j)	/mal/ M	māl-ɖá	māl-ān-sá	‘gather’
(k)	/wɛr/ M	wēr-sá	wēr-ān-sá	‘watch’
(l)	/ɲaw/ H	ɲáṵ-sṵ	ɲáw-ān-sá	‘request’
(m)	/kɔy/ H	kṵé-sṵ	kóy-ən-sṵ	‘cook’
(n)	/fɛð/ H	fěé-sá	fěð-ān-sá	‘release’
(o)	/pa/ M	pā-sá	pā.-ān-sá	‘guard’

9.10.2 Antipassive tonal morphology

The antipassive suffix *-An* has no underlying tone. However, three root tone melodies change in antipassive forms, as shown by table 43.

Table 43: Antipassive tone changes

Root tone melody	Antipassive root tone melody
H	HM
M	MH
L	LH
HL, HM, ML, MH	no change

Since the antipassive suffix *-An* has no underlying tone, the second tone of the root tone melody is delinked and reassigned to the antipassive suffix in accordance with {M6} in 3.4.1. As in all third singular finite verbs, High tone is assigned to the final

(59) **Antipassive suffix -*An* on third singular completive verbs**

	Root tone	3sN COMP	ANTIP tone	3sN ANTIP COMP	
(a)	H	fír-sṵ	HM	fír-ən-sṵ	‘smell’
(b)	M	cṵr-sṵ	MH	cṵr-ən-sṵ	‘help’
©	L	ɖùr-sū	LH	ɖùr-ūn-sú	‘bury’
(d)	HL	pêr-sṵ	HL	pêr-ən-sṵ	‘attach’
(e)	HM	bél-ɖá	HM	bél-ān-sá	‘name’
(f)	ML	bùɲ-sū	ML	bùɲ-ɖ-ūn-sū	‘make-big’
(g)	MH	kṵs-sṵ	MH	kṵð-ən-sṵ	‘strike’

attaches to form other causative verb forms.

Table 44: Causative suffix

Completives	-s ⁺ A
Other verb forms	-ḑ ⁺ A

The list of (61) compares the un-derived main verb form and derived causative form of the roots /*mar*/ ‘buy/sell’ and /*tir*/ ‘die/kill’. In each verb, the main form differs from the causative form by tone, [ATR] quality, or the suffix -ḑ⁺ A.

(61) **Causative ‘kill’ and ‘sell’ forms compared with non-causative forms ‘die’ and ‘buy’**

	/māār/	/mōr-ḑ/	/tīr/	/tīr-ḑ/
Verb form	‘buy’	‘sell’	‘die’	‘kill’
INF	māār-r	mōr-ḑ	tīr-r	tīr-ḑ
COMP.3sN	máár-sá	mōr-só	tīr-só	tīr-só
SBJV.1sN	māār	mōr-ḑō	tīr	tīr-ḑō
SBJV.3sN	máár-ḑá	mōr-ḑó	tīr-ḑó	tīr-ḑó
IMP	māār	mōr-ḑó	tīr	tīr-ḑó
IMP.PL	móōr-ḑō	mōr-ḑō	tīr-ḑō	tīr-ḑō
INCP.3sN	māār	mōr-ḑó	tīr	tīr-ḑó
CONT.P.3sN	māār-án	mōr-ḑ-ón	tīr-ón	tīr-ḑ-ón
ANTIP-COMP.3SN	māār-án-sá	mōr-ōn-só	tīr-ón-só	tīr-ōn-só

The vowel of the causative suffix is elided when followed by the vowel-initial continuous suffix, in accordance with the vowel elision rule {M1} in 3.1.

In (62), causative complete and incomplete paradigms are compared with non-causative forms, and in (63), causative subjunctive and continuous non-past forms are compared. All person forms of causative subjunctive verbs have the same segmental form.

(62) **Causative complete and incomplete paradigms ‘buy-sell’ /māār/ ‘buy’ - /mōr-ḑ/ ‘sell’**

(a)	PRON	COMP	CAUS COMP	(b)	PRON	INCP	CAUS INCP	
	á	māār-sā	mōr-sō		â	māār	mōr-ḑō	1sN
	ú =	mōōr-sō	mōr-sō		û =	mōōr	mōr-ḑō	2sN
	ē	māār-sá	mōr-só		é	māār	mōr-ḑó	3sN
	āgg	māār-sā	mōr-sō		āggá	māār	mōr-ḑō	1pN
	ūgg =	mōōr-sō	mōr-sō		ūggú =	mōōr	mōr-ḑō	2pN
	ēggà	māār-sà	mōr-sò		ēggà	māār	mōr-ḑò	3pN

(63) **Causative subjunctive and continuous non-past paradigms**
 /t̥ir/ ‘die’ - /t̥ir-ɖ/ ‘kill’

(a)	PRON	SBJV	CAUS SBJV	(b)	PRON	CONT.P	CAUS CONT.P
	ā	t̥ir	t̥ir-ɖə		á	t̥ir-ən	t̥ir-ɖ-ən 1sN
	ū =	t̥ir	t̥ir-ɖə		ú =	t̥ir-ən	t̥ir-ɖ-ən 2sN
	ē	t̥ir-rə	t̥ir-ɖə		ē	t̥ir-ən	t̥ir-ɖ-ən 3sN
	ā	t̥ir-rə	t̥ir-ɖə		āgg	t̥ir-ən	t̥ir-ɖ-ən 1pN
	ū =	t̥ir-rə	t̥ir-ɖə		ūgg =	t̥ir-ən	t̥ir-ɖ-ən 2pN
	ē	t̥ir-rə	t̥ir-ɖə		ēggà	t̥ir-ən	t̥ir-ɖ-ən 3pN

The causative infinitive forms in (64) are listed with the non-causative infinitive forms for comparison. The semantics of each pair are close, supporting the claim that they are derived from the same root. Not all causatives are derived from verbs. The causative *kūūn-ɖ* ‘sing, play’ in (f) is derived from the noun *kən* ‘birth (n)’ and the causative *ɲən-ɖ* ‘make small’ in (g) is derived from the adjective *ɲān* ‘small, young’.

(64) **Causative and non-causative infinitive verbs**

	Root	INF		CAUS Root	CAUS INF
(a)	/muð/ H	múð-ð ‘meet’		/muɖ-ɖ/ HM	mūɖ-ɖ ‘gather’
(b)	/kəɛ/ H	kə́ɛɛ-ɲ ‘enter’		/kui-ɖ/ HM	kūi-ɖ ‘welcome’
(c)	/kər/ H	kə́r-r ‘speak’		/kur-ɖ/ HM	kūr-ɖ ‘read’
(d)	/rag/ M	rāg-g ‘stop.IT’		/rəə-ɖ/ HM	rə́ə-ɖ ‘stop (TR)’
(e)	/kən/ M	kən-n ‘birth (n)’		/kuun-ɖ/ HM	kūūn-ɖ ‘sing, play’
(f)	/ɲaan/ M	ɲāān-n ‘small (adj)’		/ɲən-ɖ/ HM	ɲən-ɖ ‘make small’
(g)	/mar/ M	māār-r ‘buy’		/mər-ɖ/ HM	mōr-ɖ ‘sell’
(h)	/t̥ir/ M	t̥ir-r ‘die’		/t̥ir-ɖ/ HM	t̥ir-ɖ ‘kill’

Causative infinitive, subjunctive, imperative, and incomplete forms are listed in (65) for the same verbs as in (64) and are segmentally identical. As in other finite forms, person inflection is marked by adding tone to the stem-final syllable (Mid to

(65) **Causative forms compared**

	CAUS INF	CAUS SBJV. 1sN	CAUS SBJV. 3sN	CAUS IMP	CAUS IMP.PL	CAUS INCP. 3sN	
(a)	mūɖ-ɖ	mūɖ-ɖū	mūɖ-ɖú	mūɖ-ɖú	mūɖ-ɖū	mūɖ-ɖú	‘gather’
(b)	kūi-ɖ	kūi-ɖə	kūi-ɖə	kūi-ɖə	kūi-ɖə	kūi-ɖə	‘welcome’
(c)	kūr-ɖ	kūr-ɖū	kūr-ɖú	kūr-ɖú	kūr-ɖū	kūr-ɖú	‘read’
(f)	rə́ə-ɖ	rə́ə-ɖə	rə́ə-ɖə	rə́ə-ɖə	rə́ə-ɖə	rə́ə-ɖə	‘stop (TR)’
(g)	kūūn-ɖ	kūūn-ɖū	kūūn-ɖú	kūūn-ɖú	kūūn-ɖū	kūūn-ɖú	‘sing, play’
(h)	ɲən-ɖ	ɲən-ɖə	ɲən-ɖə	ɲən-ɖə	ɲən-ɖə	ɲən-ɖə	‘make small’
(i)	mōr-ɖ	mōr-ɖə	mōr-ɖə	mōr-ɖə	mōr-ɖə	mōr-ɖə	‘sell’
(j)	t̥ir-ɖ	t̥ir-ɖə	t̥ir-ɖə	t̥ir-ɖə	t̥ir-ɖə	t̥ir-ɖə	‘kill’

first singular subjunctive and imperative plural forms; High to third singular subjunctive and incomplete forms). Subject pronouns and subjunctive particles distinguish incompletes and subjunctives from imperative forms which may occur without pronouns. Context must be relied upon for other identical forms.

As is discussed further in 14.5.5, antipassive causative clauses indicate that one or more of the non-agent arguments are unknown. In (66a) the object broken is unknown, in (b) the one breaking the branch is unknown, and in (c) both are unknown.

- (66a) àggáár ɲóm-ən-só ʃɛ̃n
hunter /ɲām/break.CAUS-ANTIP-COMP person
'A hunter made the person break something.'
- (b) àggáár ɲóm-ən-só gũldũn
hunter /ɲām/break.CAUS-ANTIP-COMP branch
'A hunter made someone break the branch.'
- (c) àggáár ɲóm-ən-só
hunter /ɲām/break.CAUS-ANTIP-COMP
'A hunter made someone break something.'

When the causative and antipassive suffixes come together in the same verb stem, the antipassive suffix precedes the causative suffix, as seen in the verb forms of (67).

(67) **Antipassive completive, incomplete, and continuous non-past causative forms**

	Root	COMP CAUS	INCP CAUS	CONT.N CAUS	
		ANTIP 3sN	ANTIP 3sN	ANTIP 3sN	
(a)	/pal/	pál-ən-sá	pál-ən-ǵá	pál-ən-d-ən	‘cut’
(b)	/nam/	ǵám-ən-sá	ǵám-ən-ǵá	ǵál-ən-d-ən	‘break’
		Root-ANTIP- COMP.CAUS	Root-ANTIP- CAUS	Root-ANTIP- CAUS-CONT.N	

9.11.2 Causative tone assignment

Table 45: Causative tone changes

Root tone melody	Causative root tone melody
H	HM
M	HM
L	ML
HL, HM, ML	no change
MH	HM

The causative suffixes $-s^+A$, $-q^+A$ have no underlying tone. However, four root tone melodies change in causative forms, as shown by table 45.

After root tone changes, tone assignment in causative verbs is the same as for other verb stems with those melodies. Third singular High tone assigned to the final syllable becomes Mid following Low {M9} in (c,d,f).

(68) **Third singular causative completive verbs**

	Root tone	COMP 3sN	CAUS tone	CAUS COMP 3sN	
(a)	H	fĩr-só	HM	fĩr-só	‘smell’
(b)	M	cõr-só	HM	cũr-sú	‘help’
(c)	L	ḍũr-sũ	ML	ḍũr-sũ	‘bury’
(d)	HL	pêr-sẽ	HL	pêr-sẽ	‘attach’
(e)	HM	bêl-ḍá	HM	bĩl-ḍó	‘name’
(f)	ML	dõḍs-sẽ	ML	dũũs-sũ	‘stand’
(g)	MH	kõs-só	HM	kõs-só	‘strike’

Causative incomplete verbs in first singular, third singular, and third plural are shown in (69) for various tone melodies. Third singular High tone, third plural Low tone, and first and second person Mid tone assign to the final syllables.

(69) **Causative incomplete verbs**

	Root tone	CAUS tone	INCP CAUS 1sN	INCP CAUS 3sN	INCP CAUS 3pN	
(a)	H	HM	fĩr-ḍõ	fĩr-ḍó	fĩr-ḍà	‘smell’
(b)	M	HM	cũr-ḍũ	cũr-ḍú	cũr-ḍù	‘help’
(c)	L	ML	ḍũr-ḍũ	ḍũr-ḍũ	ḍũr-ḍũ	‘bury’
(d)	HL	HL	pêr-ḍà	pêr-ḍõ	pêr-ḍè	‘attach’
(e)	HM	HM	bĩl-ḍā	bĩl-ḍá	bĩl-ḍà	‘name’
(f)	ML	ML	dũũḍ-ḍũ	dũũḍ-ḍũ	dũũḍ-ḍù	‘stand’
(g)	MH	HM	kõs-sẽ	kõs-só	kõs-sè	‘strike’

In antipassive causative forms, the root tone becomes causative tone instead of antipassive tone. The causative two-tone melodies are spread out over two syllables when the antipassive suffix is attached to the root. In the third singular antipassive completive forms of (70), High tone attaches to the stem-final syllable.

(70) **Third singular antipassive causative completive verbs**

	Root	CAUS	CAUS	ANTIP CAUS	
	tone	tone	COMP 3SN	COMP 3SN	
(a)	H	HM	fĩr-só	fĩr-ẽn-só	‘smell’
(b)	M	HM	cũr-sú	cũr-ũn-sú	‘help’
(c)	L	ML	ḍũr-sũ	ḍũr-ùn-sũ	‘bury’
(d)	HL	HL	pêr-sẽ	pôr-ẽn-sẽ	‘attach’
(e)	HM	HM	bĩl-ḍó	bĩl-ẽn-só	‘name’
(f)	ML	ML	dũ̀s-sũ	dũ̀s-ùn-sũ	‘stand’
(g)	MH	HM	kês-só	kỏ-ẽn-só	‘strike’

10 Verb word morphology

10.1 Introduction

At this point, the morphology of verb stems has been described. We now continue with a morphological description of the verb word. Whereas verb inflectional suffixes have been shown to attach to underlying-final segments, the verbal clitics of this chapter attach to surface-final segments of inflectional suffixes or elide them.

When vowel-initial clitics are attached to vowel-final suffixes of stems such as completive forms, the stem-final vowel is elided according to the rule {M1} in 3.1. When the agentive passive clitic $=\tilde{E}$ attaches to *cɔ̃r-sɔ̃* ‘help.3sN-COMP’, the suffix-final vowel is elided (*cɔ̃r-s* $=\tilde{E}$ ‘help.3sN-COMP=PAS.A’). In suffix-less stems, clitics attach to surface-final segments. The verb nominalizer clitic $=gg$ attaches to the surface-final segments of the incomplete form *bāā* ‘throw’ rather than to the underlying segments /ba/, and thus surfaces with a long vowel (*bāā* $=gg$ ‘throw=PL’).

Verb word tonal morphology is similar to verb stem tonal morphology, but with some differences. As shown in chapter 9 on stem morphology, subject person tone is added to stem-final syllables: Mid tone on first and second person verbs, High tone on third singular verbs, and Low tone on third plural verbs.

(1) Subject person tone on completive stems

	Root tone	COMP 1sN	COMP 3sN	COMP 3pN	
(a)	H	fír-sɔ̃	fír-sə́	fír-sə̀	‘smell’
(b)	M	cɔ̃r-sɔ̃	cɔ̃r-sɔ̃	cɔ̃r-sɔ̃	‘help’
(c)	L	ḍùr-sù	ḍùr-sū	ḍùr-sù	‘bury’

In that verb stem tone assignment is the point of departure for verb word tone assignment, subject person tone is commonly spread or delinked and reattached to clitics with no underlying tone {M5-6}. However, when clitics with underlying tone are added, subject person tone generally does not surface or cause alternations.

In (2), third singular $=E$, $=\tilde{E}$ and second plural $=OOgg\acute{O}$, $=\acute{O}\tilde{O}gg\acute{O}$ object clitics are attached to first singular, third singular, and third plural subject completive verbs. The tone of each clitic allomorph is different depending on the subject person verb form to which it is attached. Thus, the clitic allomorphs are listed in parentheses next to each form. The object clitics attached to first singular and third plural verbs have no underlying tone on initial vowels. Thus, they are assigned the subject person tone from the elided completive suffix vowel. The initial vowels of the clitics are assigned first singular Mid tone in (a), and are assigned third plural Low tone in (c). However, the clitics in (b) with underlying initial High tone are not assigned subject person tone.

(2) **Object clitics attached to various subject verb forms**

	‘smell-COMP’	‘smell-COMP=3sA’	‘smell-COMP=2pA’
(a) 1sN	fír-sḥ	fír-s = ī (= E)	fír-s = ūūggú (= OOggÓ)
(b) 3sN	fír-sḥ	fír-s = ī (= E)	fír-s = úūggú (= ÓŌggÓ)
(c) 3pN	fír-sḥ	fír-s = ì (= E)	fír-s = ùūggū (= OOggÓ)

In verb stem morphology, alternations are according to rules {M1-M11}. However, it is common for clitics attached to verb stems to not alternate according to these rules. The chart of (3) is given as a summary of how the rules are not applied to such clitics. Although not a defining aspect of clitics, non-application of rules in bound morphemes is viewed as support for the element being a clitic rather than a suffix.

(3) **Rules applying in derivational and clausal clitics**

	Clitic	Rules applying
PAS.A	= \hat{E}	{M9} applies for INCP and COMP but not for CONT.P
PAS	= $\hat{A}n\hat{A}$, = \hat{A}	{M9} does not apply
Object PRON	various	Person marker tone spreads to all clitic-initial vowels without underlying tone; {M7-9} apply in all forms except that {M9} does not apply for 3pN marked = $\hat{n}gg\hat{e}$.
Dative PRON	various	All clitics have underlying tone; No tone rules apply
IPF	various	All clitics have underlying tone; No tone rules apply
SBO1,2	various	{M7-8} apply to third singular = \hat{y} ‘when’, {M9} applies to third singular = \hat{E} and second plural = \hat{u} ‘if’; for other clitics, no tone rules apply
PF	= $\hat{A}r$, - $\hat{C}ar$	Person marker tone is assigned to the bound morphemes; {M7-9} apply
RDM	= \hat{E}	{M9} applies; {M1} does not apply in past continuous
VN PL	= Agg, = EEgg, = AAgg	{M5-6} apply after root tone changes

10.2 **Agented passive clitic**

The verbal clitic = \hat{E} , = $\hat{E}\hat{E}$ indicates a third person agent (or experiencer) encoded post-verbally in a prepositional phrase or in genitive case. The clitic agrees in number with the encoded agent when in genitive case but not when in a prepositional phrase. The clitic is called an ‘agented passive (PAS.A)’ marker in this thesis. It is commonly used when patients or themes are in focus, being pre-verbal. In agented passive clauses, an explicit agent is required and the encoding of the agent is required to be post-verbal. Further, the agent is marked as a non-argument,

demoted to a prepositional phrase as in (a) or in genitive case as in (b), and thus no longer the syntactic subject. The clauses of (c-d) have singular and plural agents encoded in post-verbal positions, where the clitics $=\tilde{E}$, $=\acute{E}\acute{E}$ agree in number with the agent. However, the clitic $=\tilde{E}$ of (4a) does not agree in number with the plural agent *káéggà* ‘witchdoctor’ in the prepositional phrase.

(4) **Agented passive clitic examples**

- (a) gààr cúá . . . nām-án=ĕ é káké-gg = à
pork sweet /nam/eat-CONT.P=PAS.A by witchdoctor-PL=DEF
‘Sweet pork . . . was being eaten by witchdoctors.’
- (b) nāms jńáó-s=ĕ āggāār
food /jńaw/need-COMP=PAS.A hunter.GEN
‘Food is needed by the hunter.’
- (c) gułdūn jńm-s=ĕ jēn (d) gułdūn jńm-s=ĕĕ jógò
branch break- branch break- people.GEN
COMP=PAS.A GEN COMP=PAS.A
‘The branch was broken by the ‘The branch was broken by the
person.’ person.’

In agented passive clauses, the semantic patient or theme, encoded as a noun in (5a) or pronoun as in (b), is pre-verbal. The semantic patient or theme is encoded as the syntactic subject, evidenced by the pronoun taking the same form as the third person subject pronoun (of active verbs) which can be short or long.

(5) **Pre-verbal third singular themes**

- | | | | | | | | |
|-----|-------------------------------------|------------------|---------|-----|--------------------------------------|------------------|---------|
| (a) | mīl = n | gàð-s = ē | jên | (b) | ē(ēn) | gàð-s = ē | jên |
| | goat = DEF | give- | person. | | 3sN | give- | person. |
| | | COMP = PAS.A | GEN | | | COMP = PAS.A | GEN |
| | ‘The goat was given by the person.’ | | | | ‘It (goat) was given by the person.’ | | |

The clitic is only attested with transitive verbs, and can be used when the clause has no patient or theme, as in the antipassive clause of (6b). It is not used in agentless passive clauses where the syntactic subject (patient) follows the verb, as does *tʃʃʌn* 'cow' in (d).

- | | | | | | |
|------|-------------------------------|--------------------|-----|-------------------------------|---------|
| (6a) | jĕn | nām- án -sá | (b) | nām- án -s = ē | jĕn |
| | person | break-ANTIP-COMP | | break-ANTIP-COMP=PAS.A | person. |
| | | | | | GEN |
| | 'The person broke something.' | | | 'The person broke something.' | |

- (c) ṭṣṣ = n ḍàḍ-s = **ānā** (d) ḍàḍ-s = **ānā** ṭṣṣ = n
 cow = DEF strike-COMP = PAS strike-COMP = PAS cow = DEF
 ‘The cow was struck.’ ‘The cow was struck.’

Only third person agents can be encoded post-verbally and clauses such as ‘*The person gave me.’ with a first person pre-verbal pronoun are not possible. Thus, there are only two agented passive markers. In addition, only third singular patients or themes are possible in agented passive clauses and not clauses such as ‘*I am needed by the hunter.’ Agented passive clitics are also discussed in the section on verbal valency in 14.5.1.

Table 46: Agented passive clitic

Third singular subject	= \hat{E}
Third plural subject	= $\hat{E}\hat{E}$

10.2.1 Agented passive segmental morphology

Agented passive clitics are attached to verb stems. When the root is stem-final, such as in incomplete forms, no segments are elided, even if the stem is vowel-final. In this case, the clitic is juxtaposed to the stem (*pāā*. = \hat{e} ‘guard=PAS.A’) in accordance with {M2} of 3.1. However, final vowels which are not part of the root, such as suffix-final vowels in completive and subjunctive plural forms, are elided by the initial vowel of agented passive clitics (*cōr-s* ‘help-COMP.3sN’, *cōr-s* = \hat{e} ‘help-COMP=PAS.A’), in accordance with {M1} of 3.1.

In (7), third singular incomplete forms with agented passive clitic = \hat{E} are shown with various root-final segments. The clitic attaches to the surface-final segments of the incomplete form rather than to the underlying form, as seen by the long vowels in (c, h, o-p) when the clitic is juxtaposed to open syllables. In (b-c, l-m), the root-final segment can optionally surface as a vowel or an approximant.

(7) Third singular agented passive clitic = \hat{E} on incomplete forms with various root-final segments

Root	INCP 3sN	PAS.A INCP 3sN	
(a) /ab/ L	àḍ	àḍ. = \hat{e} , àw = \hat{e}	‘sit’
(b) /kaʔ/ H	káé	káé. = \hat{e} , káy = \hat{e}	‘bring’
(c) /cig/ M	cīī	cīī. = \hat{e}	‘wear’
(d) /cuḍ/ M	cūḍ	cūḍ = \hat{e}	‘climb’
(e) /lɔf/ L	lɔf	lɔf = \hat{e}	‘do magic’
(f) /las/ M	lās	lās = \hat{e}	‘roll-up’
(g) /ɲam/ M	ɲām	ɲām = \hat{e}	‘break’
(h) /gɔn/ L	gɔn, gɔḍ	gɔn = \hat{e} , gɔḍ. = \hat{e}	‘grab’

Root	INCP 3sN	PAS.A INCP 3sN
------	----------	----------------

(i)	/guŋ/ L	gũŋ	gũŋ = ɪ	‘agree’
(j)	/mal/ M	māl	māl = ɛ	‘gather’
(k)	/wɛr/ M	wēr	wēr = ɛ	‘watch’
(l)	/ɲaw/ H	ɲáɔ́-(n)	ɲáw = ɛ, ɲáɔ́-n = ɛ	‘request’
(m)	/kɔy/ H	kɔ́ɛ-(n)	kɔ́y = ɛ, kɔ́ɛ-n = ɛ	‘cook’
(n)	/fɛð/ H	fɛð-(n)	fɛð = ɛ, fɛð-n = ɛ	‘release’
(o)	/pa/ M	pāā, pā-ɖ	pāā. = ɛ, pā-ɖ = ɛ	‘guard’
(p)	/bɛɛ/ L	bɛɛ-(n)	bɛɛ. = ɛ, bɛɛ-n = ɛ	‘say’

10.2.2 Agented passive tonal morphology

The agented passive clitic = \tilde{E} has underlying HM tone. In (8), it is attached to third singular completive and incomplete verbs, and in (9) it is attached to third singular continuous past verbs. In completive and incomplete forms, the initial High tone of the agented passive clitic becomes Mid following root-final Low tone {M9} as in (c,d,f). For unknown reasons, completive and incomplete forms with Mid root tone melody and agented passive clitic have MH tone on the root as in (8b), but not in continuous past forms with Mid root tone melody as in (9b).

(8) Agented passive clitic = \tilde{E} on completive and incomplete verbs

	Root tone	COMP 3sN	PAS.A COMP 3sN	INCP 3sN	PAS.A INCP 3sN	
(a)	H	fír-sɔ́	fír-s = ɪ	fír	fír = ɪ	‘smell’
(b)	M	cɔ́r-sɔ́	cɔ́r-s = ɛ	cɔ́r	cɔ́r = ɛ	‘help’
(c)	L	ɖùr-sū	ɖùr-s = ɪ	ɖùr	ɖùr = ɪ	‘bury’
(d)	HL	pâr-sɔ́	pâr-s = ɪ	pɔ́r	pâr = ɪ	‘attach’
(e)	HM	bél-ɖá	bél-d = ɛ	bɛ́l	bél = ɛ	‘name’
(f)	ML	dɔ́ɔ́s-sɔ́	dɔ́ɔ́s-s = ɛ	dɔ́ɔ́s	dɔ́ɔ́s = ɛ	‘stand’
(g)	MH	kɔ́s-sɔ́	kɔ́s-s = ɪ	kɔ́ð	kɔ́ð = ɪ	‘strike’

It is posited that there is no stem-final third singular High tone in the agented passive forms of (8) since the clitic-initial High tone lowers to Mid {M9} in (c,d,f).

However, it is posited that there is stem-final High tone in the continuous past forms of (9) which causes the clitic-initial High tone not to lower (not applying {M9}).

(9) Agented passive clitic = \tilde{E} on continuous past verbs

	Root tone	CONT.P 3sN	PAS.A CONT.P 3sN	
(a)	H	fír-ɔ́n	fír-ɔ́n = ɪ	‘smell’
(b)	M	cɔ́r-án	cɔ́r-án = ɛ	‘help’
(c)	L	ɖùr-ɔ́n	ɖùr-ɔ́n = ɪ	‘bury’
(d)	HL	pâr-ɔ́n	pâr-ɔ́n = ɪ	‘attach’
(e)	HM	bél-án	bél-án = ɛ	‘name’
(f)	ML	dɔ́ɔ́s-án	dɔ́ɔ́s-án = ɛ	‘stand’
(g)	MH	kɔ́ð-ɔ́n	kɔ́ð-ɔ́n = ɪ	‘strike’

(12) **Passive and active forms compared**

- (a) *kāsá* *ḍàḍ-sṓ* *ṭṣṣ=n* (b) *ḍàḍ-sṓ* *ṭṣṣ=n*
 ‘A boy struck the cow.’ ‘He struck the cow.’
- (c) *ṭṣṣ=n* *ḍàḍ-s=ānā* (d) *ṭṣṣ-n* *ḍàḍ-sā* *jēn*
 ‘The cow was struck.’ ‘The cow struck the person.’
- (e) *ḍàḍ-s=ānā* *ṭṣṣ=n*
 ‘The cow was struck.’
- (13) *fěḍ-ān=á* *jěgg=ā* *ṭád*
 /fě/put-CONT.P=PAS things=DEF down
 ‘Things were being laid down.’ (Fand27-28)

Unlike agented passive clitics, passive clitics do not distinguish number; the same passive clitics are used for both singular and plural implied agents and for singular and plural stated patients or theme (syntactic subjects). In passive clauses, only third person patients or themes are possible; clauses such as ‘*I was struck’ are not possible.

Third person dative or object pronouns can be attached to passive verbs. A dative pronoun attached to a passive verb as in (14a) refers to a beneficiary or recipient³⁵, whereas an object pronoun as in (b-d) refers to a patient or theme. The dative pronoun alone can represent a recipient as in (a) and the object pronoun alone can represent a patient, or the pronouns along with a noun reference can represent these roles as in (b-c). In 5.3, it was mentioned that subjects of active clauses can include both a noun and pronoun reference in the same clause, the pronoun added for emphasis such as for switch reference from a different participant. Syntactic subjects (recipients, patients) of passive clauses can also include both a noun and pronoun reference for emphasis, such as for switch reference in (b) and salience in (c). The *kāsā-gg* ‘boys’ of (c) is salient in that the theme of the hortatory text is tying (or training) boys in the customs appropriate for manhood.

(14) **Passives with dative and object pronouns**

- (a) *gəf-ān=īggəñ* *wārā* *mān* *é* *gārā* *ḍāf-ān=á* *ṭáld=nē*.
 given=them paper(Ar) certain GP when collect tax=SBO
 /gəf/-PAS=3pD /ḍāf/-CONT.N=PAS
 ‘They were given a receipt when the tax money was collected.’ (Fand7)

³⁵ The dative pronoun attached to passive verbs implies that dative nouns can have the role of beneficiary or recipient in passive clauses, such as in *jěgg=ñ gəf-ānā wārā* ‘The people were given paper (people=DAT give=PAS paper)’. Because of limited time, no such clauses were elicited, but presumably such clauses are possible in Gaahmg.

- (b) gâl fõndî bàg-s = **ān** = ēn³⁶ líj-ɟ = ɪ́ é kārṭūūm t̤è.
 just Fandi caught-him arrived to Khartoum here
 /bàg/-COMP = PAS = 3sA /léj/-COMP = IPF.3sN
 ‘Fandi was captured and brought here to Khartoum.’ (Fand6)
- (c) bìi kāsā-gg t̤ú-d = **ān** = ũggò l̤ŋ pád
 let boy-PL to.be.tied = they until always
 /bìj/IMP /t̤if/-SBJV = PAS = 3pA
 ‘Let boys forever and always be tied.’ (Tifa13)

The clitic = **ĀnĀ** attaches to stems with vowel-final suffixes such as subjunctive and completive forms and the clitic = **Ā** attaches to stems with consonant-final suffixes such as continuous forms or to suffix-less stems such as incomplete forms. Passives are also discussed in 14.5.3.

Table 47: Passive clitics

Stems with vowel-final suffixes	= ĀnĀ
Stems with consonant-final suffixes, Suffix-less stems	= Ā

10.3.1 Passive segmental morphology

In (15), incomplete forms with passive clitic = **Ā** are shown with various root-final segments. As with agentive passive clitics, passive clitics attach to the surface-final segments of incomplete forms rather than to underlying segments.

(15) Passive incomplete verbs

	UR	INCP 3sN	PAS INCP	
(a)	/tab/ H	táó	táó. = á, táw = á	‘add’
(b)	/kaɟ/ H	káé	káé. = á, káy = á	‘bring’
(c)	/cig/ M	cīi	cíí. = á	‘wear’
(d)	/cuḍ/ M	cūḍ	cúḍ = ó	‘climb’
(e)	/tif/ M	tīf	tíf = ó	‘tie’
(f)	/las/ M	lās	lás = á	‘roll-up’
(g)	/ɲam/ M	ɲām	ɲám = á	‘break’
(h)	/gɔn/ L	gɔ̃n, gòḍ	gò̃n = á	‘grab’
(i)	/guɲ/ L	gūɲ	gùɲ = ó	‘agree’

³⁶ The third singular pronoun = **ēn** differs from the object pronoun by an added *n*, which may be present in (b) to help distinguish the pronoun from the passive clitic alone = **ānā** which also has a final vowel. For further discussion about optional *n* on object pronouns, see 10.4.1. Or, the pronoun = **ēn** may be the long subject pronoun **ēēn** attached word-finally instead of preceding the verb as in active clauses.

	UR	INCP 3sN	PAS INCP	
(j)	/mal/ M	māl	māl = á	‘gather’
(k)	/wɛr/ M	wēr	wér = á	‘watch’
(l)	/ɲaw/ H	ɲáɔ-(n)	ɲáɔ. = á, ɲáɔ-n = á	‘request’
(m)	/kɔy/ H	kóé-(n)	kóé. = á, kóé-n = á	‘cook’
(n)	/fɛð/ H	fěð-(n)	fěð = á	‘release’
(o)	/pa/ M	pāā, pā-ɖ	páá. = á, pá-ɖ = á	‘guard’
(p)	/bɛɛ/ L	běě-(n)	běě. = á, běě-n = á	‘say’

Antipassive passive clauses are used to indicate an implied agent and unknown object.

- (16) ɲām-án-s = ānā
 break-ANTIP-COMP=PAS
 ‘Something was broken.’

In (17), antipassive passive complete and incomplete forms are shown.

(17) **Antipassive passive complete and incomplete forms**

	Root	COMP	COMP ANTIP	INCP PAS	INCP ANTIP	
		PAS	PAS		PAS	
(a)	/kɔm/ H	kóm-s= ānā	kóm-ɔ̃n-s= ānā	kóm= á	kóm-ɔ̃n= á	‘chop’
(b)	/war/ H	wár-s= ānā	wár-ān-s= ānā	wár= á	wár-ān= á	‘take’
		Root- COMP = PAS	Root-ANTIP- COMP = PAS	Root = PAS	Root-ANTIP = PAS	

Causative passive clauses are used to indicate an implied, unstated agent of a causative verb.

- (18) gùldūn ɲōm-s = ɔnó jēn
 branch break.CAUS-COMP=PAS person
 ‘The person was made to break the branch.’

In (19), causative passive incomplete, complete, and continuous past forms are shown. The vowel of the causative suffix *-ɖA* is elided in the incomplete and continuous forms, and the causative complete suffix *-s⁺A* attaches in complete forms.

(19) **Causative passive completive, incomplete, and continuous past forms**

Root	CAUS INCP PAS	CAUS COMP PAS	CAUS CONT.P PAS	
(a) /kɔr/	kūr-ɖ = ɖ	kūr-s = ɖnɔ	kūr-ɖ-ɖn = ɖ	‘read’
(b) /tʰir/	tʰir-ɖ = ɖ	tʰir-s = ɖnɔ	tʰir-ɖ-ɖn = ɖ	‘kill’
(c) /kɔn/	kúūn-ɖ = ɖ	kúūs-s = ɖnɔ	kúūn-ɖ-ɖn = ɖ	‘sing’
	Root-CAUS = PAS	Root-CAUS. COMP = PAS	Root-CAUS- CONT.P = PAS	

Antipassive causative passive clauses indicate an implied agent and one or more unknown non-agent arguments.

- (20) jēn ɲám-ɖn-s = ɖnɔ
 person break.CAUS-ANTIP-COMP=PAS
 ‘The person was made to break something.’

- (21) ɲám-ɖn-s = ɖnɔ
 /ɲām/break.CAUS-ANTIP-COMP=PAS
 ‘Someone was made to break something.’

10.3.2 Passive tonal morphology

The passive clitic =ɲnɔ on stems with vowel-final suffixes as in (22) has underlying M,H tone, and the passive clitic =ɔ on consonant-final stems as in (23) has underlying High tone. Tone in these clitics does not follow the lowering rule {M9}. In (22c,d,f), passive clitic =ɲnɔ Mid tone does not assimilate to stem-final Low tone, thus not applying {M9}.

(22) **Passive clitic =ɲnɔ on completive and subjunctive verbs**

Root tone	COMP 3sN	PAS COMP	SBJV 3sN	PAS SBJV	
(a) H	fír-sɔ	fír-s = ɖnɔ	fír-rɔ	fír-r = ɖnɔ	‘smell’
(b) M	cɔ̃r-sɔ	cɔ̃r-s = ānɔ	cɔ̃r-rɔ	cɔ̃r-r = ānɔ	‘help’
(c) L	ɖùr-sū	ɖùr-s = ɖnɔ	ɖùr-rū	ɖùr-r = ɖnɔ	‘bury’
(d) HL	pêr-sɔ	pêr-s = ɖnɔ	pêr-rɔ	pêr-r = ɖnɔ	‘attach’
(e) HM	bɛ̃l-ɖá	bɛ̃l-ɖ = ɖnɔ	bɛ̃l-ɖá	bɛ̃l-ɖ = ānɔ	‘name’
(f) ML	bũɲ-sū	bũɲ-s = ɖnɔ	bũɲ-ɖɔ	bũɲ-ɖ = ɖnɔ	‘make-big’
(g) MH	kɔ̃s-sɔ	kɔ̃s-s = ɖnɔ	kɔ̃ɖ-ɖɔ	kɔ̃ɖ-ɖ = ɖnɔ	‘strike’

In (23c,d,f), passive clitic =ɔ High tone does not lower to Mid following stem-final Low tone, thus not applying {M9}. In passive incomplete forms, Mid root tone melody as in (22b) becomes High, as in subjunctive forms. In the continuous past forms of (23b,c), Mid tone is inserted on the first of the two bound morpheme syllables, each with High tone. In the continuous past forms with agentive passive clitic in (9b,c), Mid tone was also inserted on the first of two bound morpheme syllables with High tone.

(23) **Passive clitic = ǎ on incomplete and continuous past verbs**

	Root tone	INCP 3sN	PAS INCP	CONT.P 3sN	PAS CONT.P	
(a)	H	fír	fír = ǎ	fír-ǎn	fír-ǎn = ǎ	‘smell’
(b)	M	cǫr	cǫr = á	cǫr-án	cǫr-án = á	‘help’
(c)	L	ǫúr	ǫúr = ǎ	ǫúr-ǎn	ǫúr-ǎn = ǎ	‘bury’
(d)	HL	pǫ́r	pǫ́r = ǎ	pǫ́r-ǎn	pǫ́r-ǎn = ǎ	‘attach’
(e)	HM	bél 1	bél = á	bél-án	bél-án = á	‘name’
(f)	ML	bũn-ǫ	bũn-ǫ = ǎ	bũn-ǫ-ǎn	bũn-ǫ-ǎn = ǎ	‘make-big’
(g)	MH	kǎð	kǎð = ǎ	kǎð-ǎn	kǎð-ǎn = ǎ	‘strike’

In (24), the passive clitic = ǎnǎ is attached to third singular antipassive completive verbs. In each, the antipassive two-tone melodies are spread out over the first two syllables and the Mid-High passive tone surfaces on the final two syllables.

(24) **Antipassive passive completive verbs with clitic = ǎnǎ**

	Root tone	ANTIP tone	ANTIP COMP 3sN	PAS ANTIP COMP	
(a)	H	HM	fír-ǎn-sǎ	fír-ǎn-s = ǎnǎ	‘smell’
(b)	M	MH	cǫr-ǎn-sǎ	cǫr-ǎn-s = ǎnǎ	‘help’
(c)	L	LH	ǫúr-ũn-sú	ǫúr-ũn-s = ǎnǎ	‘bury’
(d)	HL	HL	pǫ́r-ǎn-sǎ	pǫ́r-ǎn-s = ǎnǎ	‘attach’
(e)	HM	HM	bél-ǎn-sǎ	bél-ǎn-s = ǎnǎ	‘name’
(f)	ML	ML	bũn-ǫ-ũn-sũ	bũn-ǫ-ũn-s = ǎnǎ	‘make-big’
(g)	MH	MH	kǎð-ǎn-sǎ	kǎð-ǎn-s = ǎnǎ	‘strike’

In (25), the passive clitic = ǎnǎ is attached to third singular causative completive verbs. In each, the causative two-tone melodies surface on the first syllable and the Mid-High passive tone surfaces on the final two syllables.

(25) **Causative passive verbs with clitic = ǎnǎ**

	Root tone	CAUS tone	CAUS COMP 3sN	PAS CAUS COMP	
(a)	H	HM	fír-sǎ	fír-s = ǎnǎ	‘smell’
(b)	M	HM	cúr-sú	cúr-s = ǎnǎ	‘help’
(c)	L	ML	ǫúr-sũ	ǫúr-s = ǎnǎ	‘bury’
(d)	HL	HL	pǫ́r-sǎ	pǫ́r-s = ǎnǎ	‘attach’
(e)	HM	HM	bíl-ǫǎ	bíl-ǫ = ǎnǎ	‘name’
(f)	ML	ML	bũn-sũ	bũn-s = ǎnǎ	‘stand’
(g)	MH	HM	kǎs-sǎ	kǎs-s = ǎnǎ	‘strike’

In (26), the passive clitic = ǎnǎ is attached to third singular antipassive causative completive verbs. In each, the causative two-tone melodies surface on the first two syllables and the Mid-High passive tone surfaces on the final two syllables.

(26) **Antipassive causative passive completive verbs with clitic =ĀnĀ**

	Root	CAUS	CAUS	CAUS ANTIP	PAS CAUS ANTIP	
	tone	tone	COMP 3sN	COMP 3sN	COMP	
(a)	H	HM	fīr-sá	fīr-ān-sá	fīr-ān-s = ānó	‘smell’
(b)	M	HM	cūr-sú	cūr-ūn-sú	cūr-ūn-s = ānó	‘help’
(c)	L	ML	ḍūr-sū	ḍūr-ūn-sū	ḍūr-ūn-s = ānó	‘bury’
(d)	HL	HL	pār-sā	pār-ān-sā	pār-ān-s = ānó	‘attach’
(e)	HM	HM	bíl-ḍá	bíl-ān-sá	bíl-ān-s = ānó	‘name’
(f)	ML	ML	būj-sū	būj-ḍ-ūn-sū	būj-ḍ-ūn-s = ānó	‘stand’
(g)	MH	HM	kās-sá	kāḍ-ān-sá	kāḍ-ān-s = ānó	‘strike’

10.4 Object pronouns

Second and third person object pronouns are clitics attached to verb stems, whereas first person object pronouns are analyzed as separate morphemes since they do not undergo changes in [ATR] quality. As presented in 5.4, the unmarked object pronouns are relisted in (27). Several person object pronouns have tonal allomorphs which are discussed in the following section on object pronoun tonal morphology.

(27) **Unmarked object pronouns**

Singular person pronouns	Plural person pronouns
a	1sA
=O	2sA
=E, =Ē	3sA
	aaggá, áāggá
	=OOggŌ, =ÓŌggŌ
	=EEggĀ, =ÉĒggĀ
	1pA
	2pA
	3pA

First person pronouns have back unrounded [-ATR] vowels which do not become [+ATR] regardless of the root they follow. Thus they are analyzed as separate morphemes. When first person object pronouns follow verb stems with suffixes such as the completive forms *cār-sá* ‘help-COMP’, *cūr-sú* ‘tie-COMP’ of (28), the stem-final vowel is elided and the tone of the verb root spreads to the object pronoun, just as if the first person object were a clitic as the other object pronouns. In 12.1, it is shown that independent body part locatives sometimes have elided vowels and tone changes similar to clitics. The first person object pronouns are no more unusual in their alternations than these body part locatives.

(28a)	ē	cār-s á	(b)	ē	cūr-s á
	3sN	/cār/help-COMP 1sA		3sN	/cūr/tie-COMP 1sA
		‘He helped me.’			‘He tied me.’

Marked third person object pronouns are [+ATR] and also have tonal allomorphs.

(29) **Marked third person object pronouns**

Singular person pronouns	Plural person pronouns
=i, =î, =îngî	3sAM
=iiggò, =îiggò, =înggò	3pAM

As mentioned in 5.4, one difference between the two sets of third object pronouns is grammatical agreement with the subordinate clause in which the noun referents are introduced. In (30a), the unmarked [-ATR] object pronoun attached to *wár-s* = *ɛ̃* ‘take-COMP=3sA’ refers to the noun *páré=n* ‘bag=DEF’ introduced in the subordinate ‘if’ clause, whereas in (b) the marked [+ATR] object pronoun attached to *wár=i* ‘take.INCP=3sAM’ refers to a noun introduced by the subordinate conjunction *é gārā* ‘when’.

(30) **Third singular marked and unmarked object pronouns**

- (a) *jāā=n* *ē* *ŋān-s=ē* *páré=n=é*, *á* *léē* *wár-s=ɛ̃*
 person 3sN file-COMP bag=DEF 1sN come. take-COMP
 = DEF = SBO2 = SBO INCP = 3sA
 ‘If the person filed/sanded the leather bag, I will come take it.’
- (b) *é gārā* *jāā=n* *ŋān-s=i* *páré=n=é*, *á* *léē* *wár=i*
 (GP) person /ŋān/file-COMP bag=DEF 1sN come. take.INCP
 when = DEF = SBO1 = SBO INCP = 3sAM
 ‘When the person has filed the bag, I will come take it.’

As discussed in 10.2, the agented passive clitic =*Ē* of (31a-b) indicates a third person agent (or experiencer) encoded post-verbally in a prepositional phrase or in genitive case, and agrees in number with the subject. Post-verbal agents are in genitive case which is marked by a tone change. In such clauses, the semantic patient or theme (syntactic subject), encoded as a noun in (a) or pronoun as in (b), is pre-verbal.

(31) **Pre-verbal third singular themes**

- (a) *mīi=n* *gàð-s=ē* *jên* (b) *ē(ēn)* *gàð-s=ē* *jên*
 goat=DEF give- person. 3sN give- person.
 COMP=PAS.A GEN COMP=PAS.A GEN
 ‘The goat was given by the person.’ ‘It (goat) was given by the person.’

We now compare marked and unmarked objects and syntactic subjects (semantic patients or themes) of agented passive clauses. We compare third singular and plural subjects with third singular and plural objects. Clauses which compare the grammatical structures are first shown in (32), and the resulting verb forms which compare the morphemes are shown in the chart of (33).

In each of the clauses of (32), a third singular subject is combined with a third singular object. These grammatical structures are representative of the singular and plural combinations of subjects and objects shown in the chart to follow. In (a), the subject verb form has no object pronoun, in (b) the verb has an unmarked object pronoun, and in (c) a marked object pronoun. The clause of (d) has the same meaning as those of (b-c), but the pronoun patient is in focus, being a syntactic

As shown in (33), unmarked third object pronouns segmentally agree in number with their referent; the segment *-gg-* marks the plural object (*bèl-d = ēēggà* ‘beat=3sN/3pA’, *bēl-d = ēēggà* ‘beat=3pN/3pA’). The different tonal allomorphs of the objects predictably attach to different subject forms as further described in 10.4.2. In marked third object pronouns, the segment *-gg-* marks the plural object (*bīl-d = īggà* ‘beat=3sN/3pAM’, *bīl-d = īggà* ‘beat=3pN/3pAM’) as well as a singular object combined with a plural subject (*bīl-d = īggī* ‘beat=3pN/3sAM’). Again, the different tonal allomorphs of the objects predictably attach to different subject forms. Syntactic pronoun subjects of agentive passive clauses have the same form as subjects of active clauses [*ē(ēn)* ‘he (3sN)’, *ēggà* ‘they (3pN)’]. They are independent and agree in number with the referent. For these pre-verbal patients or themes, the agentive passive verb clitic *=Ē* marks that a singular agent comes after the verb and the suffix *=ĒĒ* marks that a plural agent comes after the verb.

10.4.1 Object pronoun segmental morphology

In (34), the third singular unmarked object clitic *=Ē* and marked clitic *=ì* are attached to incomplete verbs with various root-final segments. The clitics attach to the surface-final segments of the incomplete form rather than to the underlying segments.

(34) Third singular object clitics *=Ē, =ì* on incomplete verbs

	UR	INCP 3sN	INCP 3sN/3sA	INCP 3sN/3sAM	
(a)	/ab/ L	àḥ	àḥ. = ē, àw = ē	ḥū. = ì, ḥw = ì	‘sit’
(b)	/kaʃ/ H	káé	káé. = ē, káy = ē	káf. = ì, káy = ì	‘bring’
(c)	/cig/ M	cīī	cīī. = ī	cīī. = ì	‘wear’
(d)	/cuḍ/ M	cūḍ	cūḍ = ī	cūḍ = ì	‘climb’
(e)	/lɔf/ L	lḥf	lḥf = ē	lūf = ì	‘do magic’
(f)	/las/ M	lās	lās = ē	lās = ì	‘roll-up’
(g)	/ɲam/ M	ɲām	ɲām = ē	ɲām = ì	‘break’
(h)	/gɔn/ L	gḥn, gḥḥ	gḥn = ē, gḥḥ. = ē	gūn = ì, gūū. = ì	‘grab’
(i)	/guɲ/ L	gūɲ	gūɲ = ī	gūɲ = ì	‘agree’
(j)	/mal/ M	māl	māl = ē	māl = ì	‘gather’
(k)	/wer/ M	wēr	wēr = ē	wīr = ì	‘watch’
(l)	/ɲaw/ H	ɲáḥ-(n)	ɲáḥ. = ē, ɲáw = ē	ɲáú. = ì, ɲáú = ì	‘request’
(m)	/kɔy/ H	kóé-(n)	kóé. = ē, kóy = ē	kúí. = ì, kúí = ì	‘cook’
(n)	/fɛð/ H	féð-(n)	féð = ē, féð = nē	fīð = ì, fīð = ì	‘release’
(o)	/pa/ M	pāā, pā-ḍ	pāā = ē, pā-ḍ = ē	pḥḥ = ì, pḥ-ḍ = ì	‘guard’
(p)	/beɛ/ L	bèè-(n)	bèè = ē, bèè-n = ē	bīī. = ì, bīī-n = ì	‘say’

When object clitics are attached to polysyllabic, vowel-final stems, such as in the complete form *cḥr-s* ‘help.3sN-COMP’, the stem suffix vowel is elided {M1} as in *cḥr-s = ē* ‘help.3sN-COMP=3sA’. When a singular person object clitic vowel is the same as the elided complete suffix vowel, the object clitic vowel can be

lengthened and *n* added so as to distinguish the two bound morphemes *c̣r-s = ɔ̃(ɔ̃n)* ‘help.3sN-COMP=2sA’. In (35), the first singular *a* and second singular *=O* object pronouns follow third singular completive forms with various root vowels. The segments in parentheses are optionally added to distinguish the object pronoun from the completive suffix alone.

(35) **Object pronouns *A*, *=O* on third singular completives**

UR	3sN	3sN/1sA	3sN/2sA	
/ɟer/ L	ɟèr-sā	ɟèr-s ā(ān)	ɟèr-s = ɔ̃	‘forget’
/kaam/ HL	káām-sā	káām-s ā(ān)	káām-s = ɔ̃	‘work’
/c̣or/ M	c̣ōr-ṣó	c̣ōr-s á	c̣ōr-s = ɔ̃(ɔ̃n)	‘help’
/cur/ H	cúr-sú	cúr-s á	cúr-s = ú(ún)	‘tie’

10.4.2 Object pronoun tonal morphology

Underlying tone for object pronouns is shown in table 48. For several object pronouns, there are different tonal allomorphs when attached to different subject forms. Third singular *=Ē*, first plural *áággá* and second plural *=ÓŌggÓ* objects have underlying initial HM tone when attached to third singular verbs, but otherwise have no tone on the first syllable. Third plural *=ÉĒggÁ* objects have underlying initial HL tone when attached to third singular and third plural verbs, but otherwise have no tone on the first syllable. First *a* and second *=O* singular objects have no underlying tone regardless of the subject form to which they are attached. Third marked objects have underlying initial Low tone *=ì*, *=ìggè* when attached to third singular verbs, and have underlying initial HL tone *=îggì*, *=îggè* when attached to third plural verbs, but otherwise have no tone on the first syllable.

Table 48: Tone of object pronouns on subject person verb forms

	Unmarked						Marked	
	1sA	2sA	3sA	1pA	2pA	3pA	3sAM	3pAM
1sN		=O	=E		=OOggÓ	=EEggÀ	=i	=iiggè
2sN	a		=E	aaggá		=EEggÀ	=i	=iiggè
3sN	a	=O	=Ē	áággá	=ÓŌggÓ	=ÉĒggÁ	=ì	=ìggè
1pN		=O	=E		=OOggÓ	=EEggÀ	=i	=iiggè
2pN	a		=E	aaggá		=EEggÀ	=i	=iiggè
3pN	a	=O	=E	aaggá	=OOggÓ	=ÉĒggÁ	=îggì	=îggè

Tone assignment on object pronouns attached to incomplete, completive, and continuous forms is mostly the same for respective person forms to which the objects are attached. We now present various object pronouns with these three verb forms.

In (36), the second singular *=O*, third singular *=E*, second plural *=OOggÓ*, and third plural *=EEggÀ* object pronouns are attached to first singular incomplete

forms with various root tone melodies. First person Mid tone is assigned to initial clitic vowels with no underlying tone {M5-6}, but assimilates to preceding Low {M9} in (c,d,f).

(36) **First singular incomplete verbs with second singular =*O*, third singular =*E*, second plural =*OOggÓ*, and third plural =*EEggÁ* object pronouns**

Root tone	INCP 1sN	INCP 1sN/ 2sA	INCP 1sN/ 3sA	INCP 1sN/ 2pA	INCP 1sN/ 3pA	
(a) H	fír	fír = ū	fír = ī	fír = ūūggú	fír = īiggè	‘smell’
(b) M	cōr	cōr = ɔ̄	cōr = ē	cōr = ɔ̄ɔ̄ggɔ̄	cōr = ēēggà	‘help’
(c) L	ḍùr	ḍùr = ù	ḍùr = ì	ḍùr = ùùggū	ḍùr = ìiggè	‘bury’
(d) HL	pâr	pâr = ù	pâr = ì	pâr = ùùggū	pâr = ìiggè	‘attach’
(e) HM	bēl	bēl = ɔ̄	bēl = ē	bēl = ɔ̄ɔ̄ggɔ̄	bēl = ēēggà	‘name’
(f) ML	būn-ḍù	būn-ḍ = ù	būnḍ = ì	būn-ḍ = ùùggū	būn-ḍ = ìiggè	‘make-big’
(g) MH	kǎ ð	kǎð = ū	kǎð = ī	kǎð = ūūggú	kǎð = īiggè	‘strike’

In (37), the first singular *a* [-ATR], third singular =*Ê*, first plural *áāggá* [-ATR], and third plural =*ÊÊggÁ* object pronouns are attached to third singular incomplete verbs. Third singular High tone is assigned to the first singular object pronoun with no underlying tone {M5-6} but becomes Mid following Low in (c,d,f) {M9}.

Underlying initial High tone on the other three object pronouns also becomes Low in (c,d,f) {M9}.

(37) **Third singular incomplete verbs with first singular *a*, third singular =*Ê*, first plural *áāggá*, and third plural =*ÊÊggÁ* object pronouns**

Root tone	INCP 3sN	INCP 3sN/ 1sA	INCP 3sN/ 3sA	INCP 3sN/ 1pA	INCP 3sN/ 3pA	
(a) H	fír	fír á	fír = ī	fír áāggá	fír = īiggè	‘smell’
(b) M	cōr	cōr á	cōr = ē	cōr áāggá	cōr = ēēggà	‘help’
(c) L	ḍùr	ḍùr ā	ḍùr = ì	ḍùr áāggá	ḍùr = ìiggè	‘bury’
(d) HL	pǎ r	pâr ā	pâr = ī	pâr áāggá	pâr = ìiggè	‘attach’
(e) HM	bēl	bēl á	bēl = ē	bēl áāggá	bēl = ēēggà	‘name’
(f) ML	būn-ḍū	būn-ḍ ā	būn-ḍ = ì	būn-ḍ áāggá	būn-ḍ = ìiggè	‘make-big’
(g) MH	kǎð	kǎð á	kǎð = ī	kǎð áāggá	kǎð = īiggè	‘strike’

In (38), the same four object pronouns are attached to third plural incomplete verbs, in which the third singular =*E* and first plural *aaggā* have different tonal allomorphs with no underlying initial tone. Third plural Low tone is assigned to the initial vowels of the first three object pronouns having no underlying tone {M5-6}. The underlying initial High tone of the third plural object pronoun *ĒĒggĀ* becomes Mid following Low {M9} in (c,d,f).

(38) **Third plural incomplete verbs with first singular *a* [-ATR], third singular =*E*, first plural *aaggā* [-ATR], and third plural =*ĒĒggĀ* object pronouns**

	Root tone	INCP 3pN	INCP 3pN/ 1SA	INCP 3pN/ 3SA	INCP 3pN/ 1pA	INCP 3pN/ 3pA	
(a)	H	fīr	fīr à	fīr = ì	fīr ààggā	fīr = ñggè	‘smell’
(b)	M	cōr	cōr à	cōr = è	cōr ààggā	cōr = éèggà	‘help’
(c)	L	ḍūr	ḍūr à	ḍūr = ì	ḍūr ààggā	ḍūr = ñggè	‘bury’
(d)	HL	pâr	pâr à	pâr = ì	pâr ààggā	pâr = ñggè	‘attach’
(e)	HM	bêl	bêl à	bêl = è	bêl ààggā	bêl = éèggà	‘name’
(f)	ML	bûŋ- ḍù	bûŋ-ḍ à	bûŋ-ḍ = ì	bûŋ-ḍ ààggā	bûŋ-ḍ = ñggè	‘make- big’
(g)	MH	kǎ ǒ	kǎǒ à	kǎǒ = ì	kǎǒ ààggā	kǎǒ = ñggè	‘strike’

Similar tone assignment is shown for the same object pronouns on first singular, third singular, and third plural complete verbs in (39-41). In (39), first person Mid

(39) **First singular complete verbs with second singular =*O*, third singular =*E*, second plural =*OOggŌ*, and third plural =*EEggĀ* object pronouns**

	Root tone	COMP 1SN	COMP 1SN/ 2SA	COMP 1SN/ 3SA	COMP 1SN/ 2pA	COMP 1SN/ 3pA	
(a)	H	fīr-sō	fīr- s = ū	fīr- s = ī	fīr-s = ūūggú	fīr-s = ñggè	‘smell’
(b)	M	cōr-sō	cōr- s = ɔ̄	cōr- s = ē	cōr-s = ɔ̄ɔ̄ggó	cōr- s = ēēggà	‘help’
(c)	L	ḍūr-sù	ḍūr- s = ù	ḍūr- s = ì	ḍūr-s = ùùggū	ḍūr-s = ñggè	‘bury’
(d)	HL	pâr-sò	pâr- s = ù	pâr- s = ì	pâr-s = ùùggū	pâr-s = ñggè	‘attach’
(e)	HM	bêl-ḍā	bêl- ḍ = ɔ̄	bêl- ḍ = ē	bêl-ḍ = ɔ̄ɔ̄ggó	bêl- ḍ = ēēggà	‘name’
(f)	ML	bûŋ-sù	bûŋ- s = ù	bûŋ- s = ì	bûŋ-s = ùùggū	bûŋ- s = ñggè	‘make- big’
(g)	MH	kǎs-sō	kǎs- s = ū	kǎs- s = ī	kǎs-s = ūūggú	kǎs-s = ñggè	‘strike’

tone is assigned to initial object vowels with no underlying tone {M5-6}.

In (40), both third singular High tone assigned to the first singular object pronoun *a* with no underlying tone {M5-6} and underlying initial High tone on the other three object pronouns becomes Mid {M9} in (c,d,f).

(40) **Third singular completive verbs with first singular *a*, third singular =*Ẽ*, first plural *áāggá*, and third plural =*ĒĒggá* object pronouns**

	Root tone	COMP 3sN	COMP 3SN/ 1SA	COMP 3SN/ 3SA	COMP 3SN/ 1pA	COMP 3SN/ 3pA	
(a)	H	fír-só	fír-s á	fír-s =í	fír-s áāggá	fír-s = îggè	‘smell’
(b)	M	cōr-só	cōr-s á	cōr-s =ē	cōr-s áāggá	cōr-s = éèggà	‘help’
(c)	L	ḍùr-sū	ḍùr-s ā	ḍùr-s =ī	ḍùr-s āāggá	ḍùr-s = îggè	‘bury’
(d)	HL	pâr-sō	pâr-s ā	pâr-s =ī	pâr-s āāggá	pâr-s = îggè	‘attach’
(e)	HM	bēl-ḍá	bēl-ḍ á	bēl-ḍ =ē	bēl-ḍ áāggá	bēl-ḍ = éèggà	‘name’
(f)	ML	bûṇ-sū	bûṇ-s ā	bûṇ-s =ī	bûṇ-s āāggá	bûṇ-s = îggè	‘make- big’
(g)	MH	kǎs-só	kǎs-s á	kǎs-s =í	kǎs-s áāggá	kǎs-s = îggè	‘strike’

In (41), third plural Low tone is assigned to initial vowels of the first three object pronouns having no underlying tone {M5-6}. The underlying initial High tone of the third plural object pronoun becomes Mid {M9} in (c,d,f).

(41) **Third plural completive verbs with first singular *a*, third singular =*E*, first plural *aaggá*, and third plural =*ĒĒggá* object pronouns**

	Root tone	COMP 3pN	COMP 3pN/ 1SA	COMP 3pN/ 3SA	COMP 3pN/ 1pA	COMP 3pN/ 3pA	
(a)	H	fír-sè	fír-s à	fír-s =ì	fír-s àāggā	fír-s = îggè	‘smell’
(b)	M	cōr-sè	cōr-s à	cōr-s =è	cōr-s àāggā	cōr-s = éèggà	‘help’
(c)	L	ḍùr-sù	ḍùr-s à	ḍùr-s =ì	ḍùr-s àāggā	ḍùr-s = îggè	‘bury’
(d)	HL	pâr-sè	pâr-s à	pâr-s =ì	pâr-s àāggā	pâr-s = îggè	‘attach’

	Root tone	COMP 3pN	COMP 3pN/ 1sA	COMP 3pN/ 3sA	COMP 3pN/ 1pA	COMP 3pN/ 3pA	
(e)	HM	bêl-dà	bêl-d à	bêl-d = è	bêl-d ààggā	bêl-d = èèggā	‘name’
(f)	ML	bûn-sù	bûn-s à	bûn-s = ì	bûn-s ààggā	bûn-s = îiggè	‘make- big’
(g)	MH	kǎs-sə	kǎs-s à	kǎs-s = ì	kǎs-s ààggā	kǎs-s = îiggè	‘strike’

Similar tone assignment is shown for object pronouns attached to first singular, third singular, and third plural continuous past verbs in (42-44), although with a few differences. In (42), first person Mid tone is assigned to initial object vowels with no underlying tone {M6}.

(42) **First singular continuous past verbs with third singular =*E*, second plural =*OOggŌ*, and third plural =*EEggĀ* object pronouns**

	Root tone	CONT.P 1SN	CONT.P 1SN/3sA	CONT.P 1SN/2pA	CONT.P 1SN/3pA	
(a)	H	fír-ǎ̃n	fír-ǎ̃n = ī	fír-ǎ̃n = ūūggú	fír-ǎ̃n = īiggè	‘smell’
(b)	M	cōr-án	cōr-án = ē	cōr-án = ǝǝggó	cōr-án = ēèggā	‘help’
(c)	L	ǫ̀r-ǎ̃n	ǫ̀r-ǎ̃n = ī	ǫ̀r-ǎ̃n = ūūggú	ǫ̀r-ǎ̃n = īiggè	‘bury’
(d)	HL	pór-ǎ̃n	pór-ǎ̃n = ī	pór-ǎ̃n = ūūggú	pór-ǎ̃n = īiggè	‘attach’
(e)	HM	bél-ǎ̃̃n	bél-ǎ̃̃n = ē	bél-ǎ̃̃n = ǝǝggó	bél-ǎ̃̃n = ēèggā	‘name’
(f)	ML	bûn-d-ǎ̃̃n	bûn-d-ǎ̃̃n = ī	bûn-d-ǎ̃̃n = ūūggú	bûn-d-ǎ̃̃n = īiggè	‘make- big’
(g)	MH	kǎǎ-ǎ̃̃n	kǎǎ-ǎ̃̃n = ī	kǎǎ-ǎ̃̃n = ūūggú	kǎǎ-ǎ̃̃n = īiggè	‘strike’

In (43), underlying initial High tone on the three object pronouns remains High following High tone on the continuous past suffix.

(43) **Third singular continuous past verbs with third singular =*Ē*, first plural =*áāggá*, and third plural =*ĒĒggĀ* object pronouns**

	Root tone	CONT.P 3sN	CONT.P 3sN/3sA	CONT.P 3sN/1pA	CONT.P 3sN/3pA	
(a)	H	fír-ǎ̃n	fír-ǎ̃n = ǎ̃	fír-ǎ̃n áāggá	fír-ǎ̃n = ŋggè	‘smell’
(b)	M	cōr-án	cōr-án = ē	cōr-án áāggá	cōr-án = ēèggā	‘help’

	Root tone	CONT.P 3sN	CONT.P 3SN/3SA	CONT.P 3SN/1pA	CONT.P 3sN/3pA	
(c)	L	ḍùr-ṣ́n	ḍùr-ṣ́n=ṽ	ḍùr-ṣ́n áāggá	ḍùr-ṣ́n = ṽggà	'bury'
(d)	HL	pár-ṣ́n	pár-ṣ́n=ṽ	pár-ṣ́n áāggá	pár-ṣ́n = ṽggà	'attach'
(e)	HM	bél-ṣ́n	bél-ṣ́n=ṽ	bél-ṣ́n áāggá	bél-ṣ́n = éēggà	'name'
(f)	ML	bùṅ-ḍ-ṣ́n	bùṅ-ḍ-ṣ́n=ṽ	bùṅ-ḍ-ṣ́n áāggá	bùṅ-ḍ-ṣ́n = ṽggà	'make- big'
(g)	MH	kǎḍ-ṣ́n	kǎḍ-ṣ́n=ṽ	kǎḍ-ṣ́n áāggá	kǎḍ-ṣ́n = ṽggà	'strike'

In (44), third plural Low tone is assigned to initial vowels of the first two object pronouns, having no underlying tone. The underlying initial High tone of the third plural object pronoun remains High following High tone on the continuous past suffix. For unknown reasons there is no stem-final third plural Low tone present in such forms or the initial High tone of the third plural object clitic is not lowered if stem-final Low tone is present {M9 does not apply}.

(44) **Third plural continuous past verbs with third singular =E, first plural *aaggá*, and third plural =ÉÉggà object pronouns**

	Root tone	CONT.P 3pN	CONT.P 3pN/3SA	CONT.P 3pN/1pA	CONT.P 3pN/3pA	
(a)	H	fír-ṣ́ n	fír-ṣ́n = ì	fír-ṣ́n àāggā	fír-ṣ́n = ṽggà	'smell'
(b)	M	cōr-ṣ́n	cōr-ṣ́n = è	cōr-ṣ́n àāggā	cōr-ṣ́n = éēggà	'help'
(c)	L	ḍùr-ṣ́n	ḍùr-ṣ́n = ì	ḍùr-ṣ́n àāggā	ḍùr-ṣ́n = ṽggà	'bury'
(d)	HL	pár-ṣ́ n	pár-ṣ́n = ì	pár-ṣ́n àāggā	pár-ṣ́n = ṽggà	'attach'
(e)	HM	bél-ṣ́ n	bél-ṣ́n = è	bél-ṣ́n àāggā	bél-ṣ́n = éēggà	'name'
(f)	ML	bùṅ-ḍ-ṣ́ n	bùṅ-ḍ-ṣ́n = ì	bùṅ-ḍ-ṣ́n àāggā	bùṅ-ḍ-ṣ́n = ṽggà	'make- big'
(g)	MH	kǎḍ-ṣ́ n	kǎḍ-ṣ́n = ì	kǎḍ-ṣ́n àāggā	kǎḍ-ṣ́n = ṽggà	'strike'

We also show marked object pronouns attached to three persons of completive forms. In (45), the third singular =*i* and third plural =*iiggà* marked object pronouns are attached to first singular completive forms. Second person Mid tone is

(45) **First singular completive verbs with third singular =*i* and third plural =*iiggà* marked object pronouns**

	Root tone	COMP 1sN	COMP 1sN/3sAM	COMP 1sN/3pAM	
(a)	H	fír-sá	fír-s = ī	fír-s = īiggà	'smell'
(b)	M	cōr-sá	cūr-s = ī	cūr-s = īiggà	'help'
(c)	L	ḍùr-sū	ḍùr-s = ì	ḍùr-s = ìiggà	'bury'
(d)	HL	pâr-sá	pâr-s = ì	pâr-s = ìiggà	'attach'
(e)	HM	bél-ḍá	bíl-ḍ = ī	bíl-ḍ = īiggà	'name'
(f)	ML	bùṅ-sū	bùṅ-s = ì	bùṅ-s = ìiggà	'make-big'
(g)	MH	kǎs-sá	kǎs-s = ī	kǎs-s = īiggà	'strike'

assigned to initial object pronoun vowels with no underlying tone, but assimilates to preceding Low {M9} in (c,d,f).

In (46), the third singular =*ɪ* and third plural =*ɪggə* object pronouns with underlying Low tone are attached to third singular completive verbs. Third singular High tone is not present on the completive suffix since Low root tone in (c) becomes Mid {M8} and the Mid of HM root tone in (e) assimilates to the object clitic Low tone {M7}.

(46) **Third singular completive verbs with third singular =*ɪ* and third plural =*ɪggə* object pronouns**

	Root tone	COMP 3sN	COMP 3sN/3sAM	COMP 3sN/3pAM	
(a)	H	fɪr-sə	fɪr-s = ɪ	fɪr-s = ɪggə	‘smell’
(b)	M	cɔ̃r-sə	cɔ̃r-s = ɪ	cɔ̃r-s = ɪggə	‘help’
(c)	L	ɖɔ̃r-sū	ɖɔ̃r-s = ɪ	ɖɔ̃r-s = ɪggə	‘bury’
(d)	HL	pə̃r-sə	pə̃r-s = ɪ	pə̃r-s = ɪggə	‘attach’
(e)	HM	bɛ̃l-ɖá	bɛ̃l-ɖ = ɪ	bɛ̃l-ɖ = ɪggə	‘name’
(f)	ML	bɔ̃ɲ-sū	bɔ̃ɲ-s = ɪ	bɔ̃ɲ-s = ɪggə	‘make-big’
(g)	MH	kə̃s-sə	kə̃s-s = ɪ	kə̃s-s = ɪggə	‘strike’

In (47), the third singular =*ɪggɪ* and third plural =*ɪggə* object pronouns with underlying initial HL tone are attached to third plural completive verbs. In third singular object clitics, initial High tone becomes Mid following Low tone in (c,d,f) {M9}, but in third plural object clitics, for unknown reasons, initial High tone does not alternate {M9 is not applied}.

(47) **Third plural completive verbs with third singular =*ɪggɪ* and third plural =*ɪggə* object pronouns**

	Root tone	COMP 3pN	COMP 3pN/3sAM	COMP 3pN/3pAM	
(a)	H	fɪr-sə	fɪr-s = ɪggɪ	fɪr-s = ɪggə	‘smell’
(b)	M	cɔ̃r-sə	cɔ̃r-s = ɪggɪ	cɔ̃r-s = ɪggə	‘help’
(c)	L	ɖɔ̃r-sū	ɖɔ̃r-s = ɪggɪ	ɖɔ̃r-s = ɪggə	‘bury’
(d)	HL	pə̃r-sə	pə̃r-s = ɪggɪ	pə̃r-s = ɪggə	‘attach’
(e)	HM	bɛ̃l-ɖá	bɛ̃l-ɖ = ɪggɪ	bɛ̃l-ɖ = ɪggə	‘name’
(f)	ML	bɔ̃ɲ-sū	bɔ̃ɲ-s = ɪggɪ	bɔ̃ɲ-s = ɪggə	‘make-big’
(g)	MH	kə̃s-sə	kə̃s-s = ɪggɪ	kə̃s-s = ɪggə	‘strike’

10.5 Dative pronouns

As discussed in section 5.5, dative pronouns have the semantic roles of beneficiary or recipient.

- 'The Goor tribe became our enemies (lit. to us bad things).' (Minj6).

(49) **Dative pronouns**

All dative pronouns have underlying tone as shown in table 49. Dative clitic tonal

allomorphs for third plural subject forms have initial LM tone. Dative clitics for all other subject person forms have initial HM tone, or in the case of the third plural dative clitic, HL tone. All dative clitics are attached to verb forms without tonal alternations.

Table 49: Tone of dative pronouns

1sN, 2sN, 3sN, 1pN, 2pN	3pN	
= <i>ɔ̃n</i>	= <i>ɔ̃n</i>	1sD
= <i>ũn</i>	= <i>ũn</i>	2sD
= <i>ĩn</i>	= <i>ĩn</i>	3sD
= <i>ɔ̃ggɔ̃n</i>	= <i>ɔ̃ggɔ̃n</i>	1pD
= <i>ũggún</i>	= <i>ũggún</i>	2pD
= <i>ĩggèn</i>	= <i>ĩggèn</i>	3pD

In (51), the second singular =*ũn*, third singular =*ĩn*, second plural =*ũggún*, and third plural =*ĩggèn* dative pronouns are attached to first singular complete forms with various root tone melodies.

(51) **First singular complete verbs with second singular =*ũn*, third singular =*ĩn*, second plural =*ũggún*, and third plural =*ĩggèn* dative pronouns**

	Root tone	COMP 1sN	COMP 1sN/ 2sD	COMP 1sN/ 3sD	COMP 1sN/ 2pD	COMP 1sN/ 3pD	
(a)	H	fĩr-sɔ̃	fĩr-s = <i>ũn</i>	fĩr-s = <i>ĩn</i>	fĩr-s = <i>ũggún</i>	fĩr-s = <i>ĩggèn</i>	‘smell’
(b)	M	cɔ̃r-sɔ̃	cũr-s = <i>ũn</i>	cũr-s = <i>ĩn</i>	cũr-s = <i>ũggún</i>	cũr-s = <i>ĩggèn</i>	‘help’
(c)	L	ɖũr-sù	ɖũr-s = <i>ũn</i>	ɖũr-s = <i>ĩn</i>	ɖũr-s = <i>ũggún</i>	ɖũr-s = <i>ĩggèn</i>	‘bury’
(d)	HL	pêr-sɔ̃	pêr-s = <i>ũn</i>	pêr-s = <i>ĩn</i>	pêr-s = <i>ũggún</i>	pêr-s = <i>ĩggèn</i>	‘attach’
(e)	HM	bêl-ɖā	bĩl-ɖ = <i>ũn</i>	bĩl-ɖ = <i>ĩn</i>	bĩl-ɖ = <i>ũggún</i>	bĩl-ɖ = <i>ĩggèn</i>	‘name’
(f)	ML	dɔ̃ɔ̃s-sɔ̃	dũũs-s = <i>ũn</i>	dũũs-s = <i>ĩn</i>	dũũs-s = <i>ũggún</i>	dũũs-s = <i>ĩggèn</i>	‘stand’
(g)	MH	kɔ̃s-sɔ̃	kɔ̃s-s = <i>ũn</i>	kɔ̃s-s = <i>ĩn</i>	kɔ̃s-s = <i>ũggún</i>	kɔ̃s-s = <i>ĩggèn</i>	‘strike’

In (52), the first singular =*ɔ̃n*, third singular =*ĩn*, first plural =*ɔ̃ggɔ̃n*, and third plural =*ĩggèn* dative pronouns are attached to third singular complete forms.

(52) **Third singular completive verbs with first singular =*ən*, third singular =*ɪn*, first plural =*əggən*, and third plural =*iggən* dative pronouns**

	Root tone	COMP 3sN	COMP 3sN/ 1sD	COMP 3sN/ 3sD	COMP 3sN/ 1pD	COMP 3sN/ 3pD	
(a)	H	fír-sə	fír-s = ən	fír-s = ɪn	fír-s = əggən	fír-s = iggən	‘smell’
(b)	M	cōr-só	cūr-s = ən	cū-s = ɪn	cūr-s = əggən	cūr-s = iggən	‘help’
(c)	L	ḍūr-sū	ḍūr-s = ən	ḍūr-s = ɪn	ḍūr-s = əggən	ḍūr-s = iggən	‘bury’
(d)	HL	pâr-sə	pâr-s = ən	pâr-s = ɪn	pâr-s = əggən	pâr-s = iggən	‘attach’
(e)	HM	bêl-ḍá	bíl-ḍ = ən	bíl-ḍ = ɪn	bíl-ḍ = əggən	bíl-ḍ = iggèn	‘name’
(f)	ML	dṵṵs-sə	dūūs-s = ən	dūūs-s = ɪn	dūūs-s = əggən	dūūs-s = iggèn	‘stand’
(g)	MH	kəs-sə	kəs-s = ən	kəs-s = ɪn	kəs-s = əggən	kəs-s = iggèn	‘strike’

In (53), the first singular =*ən*, third singular =*ɪn*, first plural =*əggən*, and third plural =*iggən* dative pronouns are attached to third plural completive forms.

(53) **Third plural completive verbs with first singular =*ən*, third singular =*ɪn*, first plural =*əggən*, and third plural =*iggən* dative pronouns**

	Root tone	COMP 3pN	COMP 3pN/ 1sD	COMP 3pN/ 3sD	COMP 3pN/ 1pD	COMP 3pN/ 3pD	
(a)	H	fír-sə	fír-s = ən	fír-s = ɪn	fír-s = əggən	fír-s = iggèn	‘smell’
(b)	M	cōr-sə	cūr-s = ən	cū-s = ɪn	cūr-s = əggən	cūr-s = iggèn	‘help’
(c)	L	ḍūr-sū	ḍūr-s = ən	ḍūr-s = ɪn	ḍūr-s = əggən	ḍūr-s = iggèn	‘bury’
(d)	HL	pâr-sə	pâr-s = ən	pâr-s = ɪn	pâr-s = əggən	pâr-s = iggèn	‘attach’
(e)	HM	bêl-ḍà	bíl-ḍ = ən	bíl-ḍ = ɪn	bíl-ḍ = əggən	bíl-ḍ = iggèn	‘name’
(f)	ML	dṵṵs-sə	dūūs-s = ən	dūūs-s = ɪn	dūūs-s = əggən	dūūs-s = iggèn	‘stand’
(g)	MH	kəs-sə	kəs-s = ən	kəs-s = ɪn	kəs-s = əggən	kəs-s = iggèn	‘strike’

Second person forms are always [+ATR], as well as the clitics for most other person forms of incomplete imperfect verbs, but clitics of first and third person forms in completive, subjunctive, and continuous past verbs are [-ATR]. Singular person clitics have short vowels and plural person clitics have long vowels.

(55) **Imperfect paradigms on completive, subjunctive, incomplete, and continuous past verbs**

COMP=IPF	SBJV=IPF	INCP=IPF	CONT.P=IPF	
bēl-ḍ = ē	mā-ḍ = ā(n)	wár = ī	wāy-án = ē	1sN
bīl-ḍ = ī	mā-ḍ = ǎ(n)	wár = ī	wāy-án = ī	2sN
bēl-ḍ = é	mā-ḍ = é	wár = í	wāy-án = è	3sN
bēl-ḍ = áā	mā-ḍ = áā	wár = áā	wāy-án = āā	1pN
bīl-ḍ = úū	mā-ḍ = úū	wár = úū	wāy-án = úū	2pN
bēl-ḍ = éè(ggà)	mā-ḍ = éè	wár = î(ggà)	wāy-án = èè(ggà)	3pN
/bēl/ 'possess'	/mā/ 'drink'	/wár/ 'bring'	/wāy/ 'going'	

The imperfect clitic is optionally used along with the clause-final subordinate clitic =É. The imperfect clitic =Ē alone can be used as in (56a), the subordinate clitic =É alone can be attached clause-finally as in (b), or both can be attached as in (c). At least (a-b), if not also (c), have the same meaning.

(56) **First singular imperfect clitic =Ē and subordinate clitic =É**

- (a) āān á bēl-ḍ = Ē mǎsǎr-èèg = ā
 (b) āān á bēl-ḍ-ā mǎsǎr-èèg = É
 (c) āān á bēl-ḍ = Ē mǎsǎr-èèg = É
 'I had owned horses.'

In third plural forms, the segments ggà of the imperfect clitic =ÉĒ(ggà) are not present when the clause-final subordinate clitic =É is not present as in (57a).

(57) **Third plural imperfect =ÉĒ(ggà) and subordinate clitic =É**

- (a) ēggà bēl-ḍ-Ē mǎsǎr-èèg = ā
 (b) ēggà bēl-ḍ-ā mǎsǎr-èèg = É
 (c) ēggà bēl-ḍ-ÉĒggà mǎsǎr-èèg = É
 'They had owned horses.'

As with passive and dative clitics, tone of imperfect clitics does not alternate. In (58), the third singular imperfect clitic =É with underlying High tone and the third plural imperfect clitic =ÉĒ(ggà) with underlying HL tone are attached to completive forms without alternation. In third plural forms, there is no third plural Low tone present on the completive suffix since the Low root tone melody of (c)

does not become Mid ({M8} does not apply), and the Mid of the HM root tone melody of (e) does not become Low ({M7} does not apply).

(58) **Third singular =É and plural =ÉÈ(ggÁ) imperfect clitics on completive verbs**

	Root tone	COMP 3sN	IPF COMP 3sN	COMP 3pN	IPF COMP 3pN	
(a)	H	fír-só	fír-s = í	fír-sò	fír-s = î(ggò)	‘smell’
(b)	M	cōr-só	cōr-s = é	cōr-sò	cōr-s = êè(ggà)	‘help’
(c)	L	ḍùr-sū	ḍùr-s = í	ḍùr-sù	ḍùr-s = î(ggò)	‘bury’
(d)	HL	pâr-sō	pâr-s = í	pâr-sò	pâr-s = î(ggò)	‘attach’
(e)	HM	bêl-dá	bêl-d = é	bêl-dà	bêl-d = êè(ggà)	‘name’
(f)	ML	bûŋ-sū	bûŋ-s = í	bûŋ-sù	bûŋ-s = î(ggò)	‘make-big’
(g)	MH	kǎs-só	kǎs-s = í	kǎs-sò	kǎs-s = î(ggò)	‘strike’

In (59), similar tone assignment is shown for third singular and third plural imperative suffixes on subjunctive verbs.

(59) **Third singular =É and plural =ÉÈ imperfect clitics on subjunctive verbs**

	Root tone	SBJV 3sN	IPF SBJV 3sN	SBJV 3pN	IPF SBJV 3pN	
(a)	H	fír-ró	fír-r = í	fír-rò	fír-r = î	‘smell’
(b)	M	cōr-ró	cōr-r = é	cōr-rò	cōr-r = êè	‘help’
(c)	L	ḍùr-rū	ḍùr-r = í	ḍùr-rù	ḍùr-r = î	‘bury’
(d)	HL	pâr-rō	pâr-r = í	pâr-rò	pâr-r = î	‘attach’
(e)	HM	bêl-dá	bêl-d = é	bêl-dà	bêl-d = êè	‘name’
(f)	ML	bûŋ-dō	bûŋ-d = í	bûŋ-dò	bûŋ-d = î	‘make-big’
(g)	MH	kǎd-dó	kǎd-d = í	kǎd-dò	kǎd-d = î	‘strike’

In the third singular and plural incomplete imperfect verbs of (60), the initial High tone of the third singular =í and third plural =î(ggò) imperfect clitics does not

(60) **Third singular =í and plural =î(ggò) imperfect clitics on incomplete verbs**

	Root tone	INCP 3sN	IPF INCP 3sN	INCP 3pN	IPF INCP 3pN	
(a)	H	fír	fír = í	f ír	fír = î(ggò)	‘smell’
(b)	M	cōr	cūr = í	cōr	cūr = îggò	‘help’
(c)	L	ḍùr	ḍùr = í	ḍùr	ḍùr = î(ggò)	‘bury’
(d)	HL	pǎ́r	pâr = í	pâr	pâr = î(ggò)	‘attach’
(e)	HM	bêl	bíl = í	bêl	bíl = î(ggò)	‘name’
(f)	ML	bûn-ḍū	bûŋ-d = í	bûŋ-ḍù	bûŋ-d = î(ggò)	‘make-big’
(g)	MH	kǎḍ	kǎḍ = í	kǎ ḍ	kǎḍ = î(ggò)	‘strike’

alternate.

In (61), the third singular = \acute{E} and third plural = $\acute{E}\acute{E}(gg\grave{A})$ imperfect clitics, both with underlying Low tone, are attached to continuous past verbs without alternation.

(61) **Third singular = \acute{E} and plural = $\acute{E}\acute{E}(gg\grave{A})$ imperfect clitics on continuous past verbs**

	Root	CONT.P	IPF CONT.P	CONT.P	IPF CONT.P	
	tone	3sN	3sN	3pN	3pN	
(a)	H	fír-ǎn	fír-ǎn = ì	fír-ǎ`n	fír-ǎn = ìì(ggà)	‘smell’
(b)	M	cǎr-án	cǎr-án = è	cǎr-ân	cǎr-án = èè(ggà)	‘help’
(c)	L	ǫùr-ǎn	ǫùr-ǎn = ì	ǫùr-ên	ǫùr-ǎn = ìì(ggà)	‘bury’
(d)	HL	pár-ǎn	pár-ǎn = ì	pár-ǎ`n	pár-ǎn = ìì(ggà)	‘attach’
(e)	HM	bél-án	bél-án = è	bél-á`n	bél-án = èè(ggà)	‘name’
(f)	ML	bũn-ǫ-ǎn	bũn-ǫ-ǎn = ì	bũn-ǫ-ǎ`n	bũn-ǫ-ǎn = ìì(ggà)	‘make-big’
(g)	MH	kǎð-ǎn	kǎð-ǎn = ì	kǎð-ǎ`n	kǎð-ǎn = ìì(ggà)	‘strike’

10.7 Subordinate verb-final clitic

In 4.1.10, 7.7, and 8.3.8, clause-final subordinate clitics were discussed. In this section, verb-final subordinate clitics are discussed, which differ in form and function from clause-final subordinate clitics. Whereas clause-final subordinate clitics mark the end of subordinate clauses, verb-final subordinate clitics mark verbs as being in a subordinate clause and in which type of subordinate clause. There are three verb-final subordinate clitics which appear with different subordinating conjunctions introducing the clause. Third person subordinate clitics are listed in table 50 and are shown in example clauses which follow. The first verb-final subordinate clitic listed is introduced by either the conjunctions ‘when’ or ‘because’.

Table 50: Subordinate clitics on completive verbs

	clause-final	verb-final		
		‘when, because’	‘if’	‘but’
	SBO	SBO1	SBO2	SBO3
3sN	= \acute{E}	= \grave{I}	= \acute{E}	= \acute{E}
3pN	= \acute{E}	= $\hat{u}gg\grave{I}$	= \acute{E}	= \acute{E}

In (62), three subordinate clauses are sentence-initial, all marked with the clause-final subordinate clitic = \acute{E} (SBO). The verb-final clitics = \grave{I} (SBO1) and = \acute{E} (SBO2) are attached to verbs in the same clause with the clause-final clitic. In (a-b), the verb-final subordinate clitic = \grave{I} (SBO1) attaches in clauses introduced with the conjunctions \acute{e} *gǎrá* ‘when’ or \acute{e} *kǎrá* ‘because’. In (c), the verb-final subordinate clitic = \acute{E} (SBO2) attaches in the conditional ‘if’ clause, not introduced by any

conjunction. In conditional ‘if’ clauses, the subject pronoun \bar{e} ‘he’ is required between the noun subject and verb. The verb $w\acute{o}r=i$ ‘take=3sAM’ in the result clauses of (a-b) has incompletive aspect and the verb $w\acute{a}r-s=\bar{e}$ ‘take-COMP=3sA’ in the result clause of (c) has completive aspect. In addition, the object pronoun attached to the verbs in the result clause of (a-b) is the marked [+ATR] object clitic $=i$, whereas in (c) is the unmarked [-ATR] object clitic $=\bar{e}$.

(62) **Sentence-initial subordinate clauses**

- (a) $\acute{e} \text{ g\acute{a}r\acute{a}}$ $j\bar{a}\bar{a}=n$ $\eta\bar{a}\eta-s=i$ $p\acute{a}r\acute{e}=n=\acute{e}$, \acute{a} $l\acute{e}\bar{e}$ $w\acute{o}r=i$
 (GP) person / $\eta\bar{a}\eta$ /file-COMP bag=DEF 1SN come. take.INCP
 when =DEF =SBO1 =SBO INCP =3sAM
 ‘**When** the person has filed/sanded/rubbed the leather bag, I will come take it.’

- (b) $\acute{e} \text{ k\acute{o}r\acute{a}}$ $j\bar{a}\bar{a}=n$ $\eta\bar{a}\eta-s=i$ $p\acute{a}r\acute{e}=n=\acute{e}$, \acute{a} $l\acute{e}\bar{e}$ $w\acute{o}r=i$
 GP person file-COMP bag=DEF 1SN come. take.INCP
 because =DEF =SBO1 =SBO INCP =3sAM
 ‘**Because** the person has filed the bag, I will come take it.’

- (c) $j\bar{a}\bar{a}=n$ \bar{e} $\eta\bar{a}\eta-s=\bar{e}$ $p\acute{a}r\acute{e}=n=\acute{e}$, \acute{a} $l\acute{e}\bar{e}$ $w\acute{a}r-s=\bar{e}$
 person 3sN file-COMP bag=DEF 1SN come. take-COMP
 =DEF =SBO2 =SBO INCP =3sA
 ‘**If** the person filed the leather bag, I will come take it.’

The clause-final subordinate clitic $=\acute{e}$ (SBO) attaches to the final word of the clause, regardless of word category, except that it does not usually attach when the clause-final element is a verb. The clause-final clitic $=\acute{e}$ (SBO) attaches in (a), but not in (b) where the verb-final ‘if’ clitic $=\bar{e}$ (SBO2) attaches to a clause-final verb.

(63) **Clause-final subordinate clitic $=\acute{e}$**

- (a) $j\bar{a}\bar{a}=n$ \bar{e} $\eta\bar{a}\eta-s=\bar{e}$ $p\acute{a}r\acute{e}=n$ $n\acute{a}$ $w\acute{e}d=\acute{e}n=\acute{e}$, \acute{a} . . .
 person 3sN file-COMP bag=DEF REL good=RDM=SBO 1SN
 =DEF =SBO2
 ‘If the person filed the leather bag which is good, I . . .’

- (b) $j\bar{a}\bar{a}=n$ \bar{e} $\eta\bar{a}\eta-s=\bar{e}$, \acute{a} $l\acute{e}\bar{e}$
 person=DEF 3sN file-COMP=SBO2 1SN come.INCP
 ‘If the person filed, I will come.’

However, as will be discussed in 14.7, the relative clause definite clitic $=\acute{e}$ (RDM) and clause-final subordinate clitic $=\acute{e}$ (SBO) can both be attached to verbs when clause-final in definite relative clauses. In 15.3, it will be shown that the clause-final subordinate clitic $=\acute{e}$ (SBO) attaches in interrogative clauses when interrogative pronouns are pre-verbal. In 15.3, it will also be shown that when an interrogative

pronoun replacing an adverb is pre-verbal, the verb-final subordinate clitic =ʔ (SBO1) is attached to the verb.

The same distinctions are made by verb-final clitics when the subordinate clause is sentence-final as when the subordinate clause is sentence-initial.

(64) **Sentence-final subordinate clauses**

- (a) á líí, é gārā jāā = n ṽṽn-s = ʔ páré = n = é
 1sN come.COMP GP when person = file-COMP = bag = DEF =
 DEF SBO1 SBO
 ‘I came **when** the person had filed the bag.’

- (b) á líí, é kōrá jāā = n ṽṽn-s = ʔ páré = n = é
 1sN come.COMP GP person = file-COMP = bag = DEF =
 because DEF SBO1 SBO
 ‘I came **because** the person had filed the bag.’

- (c) ā líí, jāā = n ē ṽṽn-s = ē páré = n = é
 1sN come.COMP person = DEF 3sN file-COMP = bag = DEF =
 SBO2 SBO
 ‘I will come **if** the person has filed the bag.’

As shown in (65), the same verb-final subordinate ‘when’ (SBO1) clitic agrees in person with the subject when attached to completive, subjunctive, incompletive, and continuous past verbs.

(65) **Subordinate ‘when’ paradigms on completive, subjunctive, incompletive, and continuous past verb ‘file’**

	COMP=SBO1 ‘when’	SBJV=SBO1 ‘when’	INCP=SBO1 ‘while’	CONT.P=SBO1 ‘when’	
á	ṽṽn-s = ē	ṽṽn = ē	ṽṽn = ē	ṽṽn-án = ē	1sN
ō	ṽṽn-s = ī	ṽṽn = ī	ṽṽn = ī	ṽṽn-ón = ī	2sN
ē	ṽṽn-s = ʔ	ṽṽn-ḍ = ʔ	ṽṽn = ʔ	ṽṽn-ón = ʔ	3sN
āgg	ṽṽn-s = ā	ṽṽn-ḍ = ā	ṽṽn = ā	ṽṽn-án = ā	1pN
ōgg	ṽṽn-s = ū	ṽṽn-ḍ = ū	ṽṽn = ū	ṽṽn-ón = ū	2pN
ēggā	ṽṽn-s = ŋggĩ	ṽṽn-ḍ = ŋggĩ	ṽṽn = ŋggĩ	ṽṽn-ón = ŋggĩ	3pN

As shown in (66), the verb-final subordinate clitic introduced by the conjunction ‘because’ is the same clitic as that introduced by the conjunction ‘when’ (SBO1).

(66) **Subordinate ‘because’ paradigm**

COMP=SBO1 ‘because’

ḡāḡn-s = ē	1sN
ḡāḡn-s = ī	2sN
ḡāḡn-s = ǐ	3sN
ḡāḡn-s = ā	1pN
ḡāḡn-s = ū	2pN
ḡāḡn-s = ŋggĩ	3pN
‘file’	

For the verb-final subordinate ‘if’ (SBO2) clitic, there is more variance from one grammatical verb form to another than with the subordinate ‘when’ (SBO1) clitic. As in imperfect clitics attached to incomplete forms, all subjunctive ‘if’ persons except first plural have [+ATR] clitics. In subordinate ‘if’ verbs, tone differs on subjunctive suffixes from that of other verb forms. Continuous past subordinate ‘if’ forms are like infinitive forms, in that all person forms are the same.

(67) **Subordinate ‘if’ paradigms on complete, subjunctive, incomplete, and continuous past verb ‘file’**

	COMP=SBO2 ‘if’	SBJV=SBO2 ‘if’	INCP=SBO2 ‘if’	CONT.P=SBO2 ‘if’	
āān ā	ḡāḡn-s = ē	ḡāḡn = é	ḡāḡn = ǐ	ḡāḡn = ágā	1sN
ōōn ō	ḡāḡn-s = ī	ḡāḡn = í	ḡāḡn = ǐ	ḡāḡn = ágā	2sN
ēēn ē	ḡāḡn-s = ǐ	ḡāḡn-ḡ = é	ḡāḡn = ǐ	ḡāḡn = ágā	3sN
āggā à	ḡāḡn-s = ā	ḡāḡn-ḡ = ā	ḡāḡn = ā	ḡāḡn = ágā	1pN
ōggó ò	ḡāḡn-s = ū	ḡāḡn-ḡ = ū	ḡāḡn = ū	ḡāḡn = ágā	2pN
ēggà è	ḡāḡn-s = ē	ḡāḡn-ḡ = ē	ḡāḡn = ǐ	ḡāḡn = ágā	3pN

The subordinate ‘but’ (SBO3) clitic is similar to the subordinate ‘if’ (SBO2) clitic, but its paradigm differs from that of the ‘if’ clitic in root tone and in the third singular clitic. In subjunctive verbs, the subordinate ‘but’ clitic is the same as the subordinate ‘when’ (SBO1) clitic.

(68) **Subordinate ‘because, but’ paradigms on complete and subjunctive verbs**

COMP=SBO1 ‘because’	COMP=SBO3 ‘but’	SBJV=SBO3 ‘but’	
ḡāḡn-s = ē	ḡāḡn-s = ē	gàl = ē	1sN
ḡāḡn-s = ī	ḡāḡn-s = ī	gàl = ī	2sN
ḡāḡn-s = ǐ	ḡāḡn-s = é	gàl-ḡ = ǐ	3sN
ḡāḡn-s = ā	ḡāḡn-s = ā	gàl-ḡ = ā	1pN
ḡāḡn-s = ū	ḡāḡn-s = ū	gàl-ḡ = ū	2pN
ḡāḡn-s = ŋggĩ	ḡāḡn-s = ē	gàl-ḡ = ŋggĩ	3pN
‘file’	‘file’	‘ram’	

As with imperfect clitics, underlying tone on subordinate ‘when’ and ‘but’ clitics does not alternate. In (69), the first singular subordinate ‘when’ (SBO1) clitic = \bar{E} with underlying Mid tone and the third singular clitic = $\bar{\imath}$ with LM tone are attached to completive verbs without alternation. Mid clitic tone does not assimilate to preceding Low tone in (c,d,f) ({M9} does not apply). In third singular forms, third singular High tone is not present on the completive suffix since Low root tone in (c) becomes Mid {M8} and the M of HM root tone in (e) assimilates to the subordinate clitic initial Low tone {M7}.

(69) **First singular = \bar{E} and third singular = $\bar{\imath}$ subordinate ‘when’ (SBO1) clitic on completive verbs**

	Root tone	COMP 1sN	SBO1 COMP 1sN	COMP 3sN	SBO1 COMP 3sN	
(a)	H	fír-s \bar{e}	fír-s = $\bar{\imath}$	fír-s \acute{o}	fír-s = $\bar{\imath}$	‘smell’
(b)	M	c \bar{o} r-s \bar{e}	c \bar{o} r-s = \bar{e}	c \bar{o} r-s \acute{o}	c \bar{u} r-s = $\bar{\imath}$	‘help’
(c)	L	ḍùr-s \bar{u}	ḍùr-s = $\bar{\imath}$	ḍùr-s \bar{u}	ḍùr-s = $\bar{\imath}$	‘bury’
(d)	HL	p \hat{e} r-s \bar{e}	p \hat{e} r-s = $\bar{\imath}$	p \hat{e} r-s \bar{e}	p \hat{e} r-s = $\bar{\imath}$	‘attach’
(e)	HM	b \acute{e} l-ḍ \bar{a}	b \acute{e} l-ḍ = \bar{e}	b \acute{e} l-ḍ \bar{a}	b $\bar{\imath}$ l-ḍ = $\bar{\imath}$	‘name’
(f)	ML	d \bar{o} s-s \bar{e}	d \bar{o} s-s = \bar{e}	d \bar{o} s-s \bar{e}	d \bar{u} ùs-s = $\bar{\imath}$	‘stand’
(g)	MH	k \bar{s} s-s \bar{e}	k \bar{s} s-s = $\bar{\imath}$	k \bar{s} s-s \acute{o}	k \bar{s} s-s = $\bar{\imath}$	‘strike’

Similar tone assignment takes place for incomplete forms with the same subordinate clitics.

(70) **First singular = \bar{E} and third singular = $\bar{\imath}$ subordinate ‘when’ (SBO1) clitic on incomplete verbs**

	Root tone	INCP 1sN	SBO1 INCP 1sN	INCP 3sN	SBO1 INCP 3sN	
(a)	H	f $\bar{\imath}$ r	fír = $\bar{\imath}$	fír	fír = $\bar{\imath}$	‘smell’
(b)	M	c \bar{o} r	c \bar{o} r = \bar{e}	c \bar{o} r	c \bar{u} r = $\bar{\imath}$	‘help’
(c)	L	ḍùr	ḍùr = $\bar{\imath}$	ḍùr	ḍùr = $\bar{\imath}$	‘bury’
(d)	HL	p \hat{e} r	p \hat{e} r = $\bar{\imath}$	p \acute{o} r	p \hat{e} r = $\bar{\imath}$	‘attach’
(e)	HM	b \acute{e} l	b \acute{e} l = \bar{e}	b \acute{e} l	b $\bar{\imath}$ l = $\bar{\imath}$	‘name’
(f)	ML	d \bar{o} s	d \bar{o} s = \bar{e}	d \bar{o} s	d \bar{u} ùs = $\bar{\imath}$	‘make-big’
(g)	MH	k \bar{s} ḍ	k \bar{s} s = $\bar{\imath}$	k \bar{s} ḍ	k \bar{s} s = $\bar{\imath}$	‘strike’

In (71), the third plural subordinate ‘when’ (SBO1) clitic = $\hat{n}gg\bar{\imath}$ with HL, LM tone is attached to completive and incomplete verbs without alternation.

(71) **Third plural = $\hat{n}gg\hat{r}$ subordinate****‘when’ (SBO1) clitic on complete and incomplete verbs**

	Root	COMP	SBO1 COMP	INCP	SBO1 INCP	
	tone	3pN	3pN	3pN	3pN	
(a)	H	fír-sə	fír-s = $\hat{n}gg\hat{r}$	f ír	fír = $\hat{n}gg\hat{r}$	‘smell’
(b)	M	cōr-sə	cūr-s = $\hat{n}gg\hat{r}$	cōr	cūr = $\hat{n}gg\hat{r}$	‘help’
(c)	L	ḡūr-sū	ḡūr-s = $\hat{n}gg\hat{r}$	ḡūr	ḡūr = $\hat{n}gg\hat{r}$	‘bury’
(d)	HL	pâr-sə	pâr-s = $\hat{n}gg\hat{r}$	pâr	pâr = $\hat{n}gg\hat{r}$	‘attach’
(e)	HM	bêl-ḡá	bíl-ḡ = $\hat{n}gg\hat{r}$	bêl	bíl = $\hat{n}gg\hat{r}$	‘name’
(f)	ML	dōḡs-sə	dūḡs-s = $\hat{n}gg\hat{r}$	dōḡs	dūḡs = $\hat{n}gg\hat{r}$	‘make-big’
(g)	MH	kās-sə	kās-s = $\hat{n}gg\hat{r}$	kā`ō	kās = $\hat{n}gg\hat{r}$	‘strike’

In (72), the third singular subordinate ‘but’ (SBO3) clitic = \hat{E} with underlying H tone is attached to complete verbs, also without alternation.

(72) **Third singular = \hat{E} subordinate****‘but’ (SBO3) clitic on complete verbs**

	Root	COMP	SBO3 COMP	
	tone	3sN	3sN	
(a)	H	fír-sá	fír-s = í	‘smell’
(b)	M	cōr-sá	cór-s = é	‘help’
(c)	L	ḡūr-sū	ḡūr-s = í	‘bury’
(d)	HL	pâr-sə	pâr-s = í	‘attach’
(e)	HM	bêl-ḡá	bêl-ḡ = é	‘name’
(f)	ML	dōḡs-sḡ	dōḡs-s = é	‘stand’
(g)	MH	kās-sá	kās-s = í	‘strike’

Unlike subordinate ‘when’ and ‘but’ clitics, in the subordinate ‘if’ (SBO2) clitic, tone does alternate according to the tone lowering rule {M9}. In (73), the third singular = \hat{E} and second plural = \hat{u} subordinate ‘if’ clitics, both with underlying HM tone, are attached to complete verbs. The clitic-initial High tone becomes Mid following Low tone in (c,d,f). Further, Mid root tone melody becomes MH as in (b), just as

(73) **Third singular = \hat{E} and second plural = \hat{u} subordinate****‘if’ (SBO2) clitic on complete verbs**

	Root	COMP	SBO2 COMP	COMP	SBO2 COMP	
	tone	3sN	3sN	2pN	2pN	
(a)	H	fír-sá	fír-s = í	fír-sə	fír-s = \hat{u}	‘smell’
(b)	M	cōr-sá	cōr-s = é	cūr-sū	cūr-s = \hat{u}	‘help’
(c)	L	ḡūr-sū	ḡūr-s = í	ḡūr-sū	ḡūr-s = \hat{u}	‘bury’
(d)	HL	pâr-sə	pâr-s = í	pâr-sə	pâr-s = \hat{u}	‘attach’
(e)	HM	bêl-ḡá	bêl-ḡ = é	bíl-ḡḡ	bíl-ḡ = \hat{u}	‘name’
(f)	ML	dōḡs-sḡ	dōḡs-s = é	dūḡs-sū	dūḡs-s = \hat{u}	‘stand’
(g)	MH	kās-sá	kās-s = í	kās-sə	kās-s = \hat{u}	‘strike’

Mid root tone melody was shown to become MH when the agented passive clitic is attached in (8).

10.8 Perfect verbs

Perfect verbs are the counterpart of imperfect verbs. They are used for past or present actions that remain or result in the present or future. In (74a), the clitic indicates that the government did not leave after they became established in Faath area, even to the time of telling the narrative. In (b), the perfective clitic indicates that the money had already been given and should not need to be given again. In (c), the clitic, although on the noun object instead of the verb, indicates that the action of cutting remains and will not need to be done again.

(74) Perfect examples

- (a) $\text{ṭāén} \quad \text{mḏrā} = \text{n} \quad \text{lín} \quad \text{àw-sā} = \text{r} \quad \text{fááḏ-āṛ}.$
 then government = /lé/arrive. /àb/sat-COMP = PF Faath-body
 DEF INCP
 ‘Then the government (forces) arrived
 and became established in Faath area.’ (Fand16-17)
- (b) $\bar{\epsilon} \quad \text{lā} \quad \text{gḏf} = \text{i} \quad \text{wá,} \quad \bar{\epsilon} \quad \text{gḏù-s-ñ} = \text{r}.$
 3sN UNC /gāf/give.INCP = 3sAM not 3sN /gāf/give-COMP-IPF = PF
 ‘He would not give it (money), (since) he had already given.’ (Fand3)
- (c) $\bar{\epsilon} \quad \text{wār-r} \quad \text{kḏlèḏ} \quad \bar{\text{ā}} \quad \text{kóm-ḏá} \quad \text{jḡg} = \text{ḡ} = \text{r}.$
 3sN took-INF (sword) SBJV cut-SBJV.3sN people = DEF = PF
 ‘He took a koleez sword to kill (hack up completely) the people.’ (Fand5)

The perfect clitic is attached to verbs in (74a-b), but to a noun in (c). The same meaning in (c) results when the clitic attaches to the verb ($\text{kóm-ḏá} = \text{r}$) and not on the noun object ($\text{jḡg} = \text{ḡ}$). When the perfect clitic attaches to a completive imperfect verb as in (75b), the meaning can be distant past action. The difference between the completive with perfect clitic and the completive imperfect with perfect clitic is distance between event time and speech time.

(75) Perfect completive and completive imperfect verbs

- (a) $\acute{\text{á}} \quad \text{gāḏ-sā} = \text{r} \quad \text{COMP} = \text{PF} \quad \text{‘I had given.’}$
 (b) $\acute{\text{á}} \quad \text{gāḏ-s-éē} = \text{r} \quad \text{COMP-IPF} = \text{PF} \quad \text{‘I had given a long time ago.’}$

Completive, subjunctive, and completive imperfect paradigms with perfect clitic are the same as without the clitic except that completive imperfect singular person forms have lengthened vowel when the clitic is added.

(76) **Perfect verb paradigms on completive, subjunctive, and completive imperfect verbs**

COMP=PF	SBJV=PF	COMP-IPF=PF	
àw-sà = r	kóm-ā = r	gàð-s-éē = r	1sN
əw-sə = r	kúm-ə = r	gəu-s-îi = r	2sN
àw-sā = r	kóm-ḡá = r	gàðr-s-éē = r, gəù-s-îi = r	3sN
àw-sà = r	kóm-ḡā = r	gàðr-s-áā = r	1pN
əw-sə = r	kúm-ḡə = r	gəù-s-úū = r	2pN
āw-sà = r	kóm-ḡà = r	gàðr-s-éē(ggà) = r	3pN
‘had remained’	‘had cut’	‘had given’	

The perfect also occurs on incomplete, continuous, and imperatives, although with different forms of the bound morpheme. In (77a-b), the non-past continuous verb *gàf-àn* ‘give-CONT.N’ is contrasted with the non-past continuous perfect form with clitic =*Ar*. In (c-d), the simple imperative verb *bèl* ‘beat’ is contrasted with the imperative perfect form with the suffix -*CAr*. As will be shown shortly, the perfect morpheme on incomplete and imperative verbs is a suffix which attaches to underlying root-final segments, rather than a clitic which attaches to surface-final segments.

(77) **Perfect continuous non-past and imperative**

- | | | | | | |
|-----|---|-------------|-----|----------------|---|
| (a) | ā | gàf-àn | mīi | INCP-CONT.N | ‘I will be giving a goat.’ |
| (b) | ā | gàf-àn = ār | mīi | INCP-CONT.N=PF | ‘I will give a goat
(and not take it back).’ |
| (c) | | bèl | ǰǰ! | IMP | ‘Just beat!’ |
| (d) | | bèl-lār | ǰǰ! | IMP-PF | ‘Just beat completely!
(so that it won’t need
to be beaten again).’ |

Perfect incomplete and non-past continuous paradigms are in given in (78).

(78) **Perfect verb paradigms on incomplete and continuous non-past verbs**

CONT.N=PF	INCP-PF	
cōr-án = ār	cúr-rōr	1sN
cūr-ón = ər	cúr-rōr	2sN
cōr-án = ár	cúr-rór	3sN
cōr-án = ār	cúr-rōr	1pN
cūr-ón = ər	cúr-rōr	2pN
cōr-án = àr	cúr-rèr	3pN
‘will have helped’	‘have tied’	

Perfect morphemes are listed in table 51. The incomplete and imperative perfect is a suffix attaching to the root, whereas the perfect on other forms is a clitic attaching to the stem.

Table 51: Perfective morphemes

Incomplete, imperative	-C <u>A</u> r
Continuous non-past	= <u>A</u> r
Other verb forms	=r

In (79), the perfect suffix -CAr is attached to incomplete verbs. The suffix-initial consonant takes on all the features of the root-final consonant and becomes the dental plosive *ɟ* when attached to vowel-final roots. The resulting geminate plosives surface as single segments. If the perfect morpheme were a clitic attaching to the surface-final segments, among other differences the short vowel of *pā-ɟár* ‘guard’ in (o) would be long.

(79) **Third singular perfect incomplete clitic -CAr**

	UR	INCP 3sN	PF INCP 3sN	
(a)	/ab/ L	àḥ	àb-bār	‘sit’
(b)	/kaɟ/ H	káé	káj-jár	‘bring’
(c)	/cig/ M	cīi	cīg-gór	‘wear’
(d)	/cuɟ/ M	cūɟ	cūɟ-ɟór	‘climb’
(e)	/lɔf/ L	lḥf	lḥf-fār	‘do magic’
(f)	/las/ M	lās	lās-sár	‘roll-up’
(g)	/nam/ M	nām	nām-már	‘break’
(h)	/gɔn/ L	gḥn	gḥn-nār	‘grab’
(i)	/guɲ/ L	gūɲ	gūɲ-nōr	‘agree’
(j)	/mal/ M	māl	māl-lár	‘gather’
(k)	/wer/ M	wēr	wēr-rár	‘watch’
(l)	/naw/ H	náɔ-(n)	náv-wár	‘request’
(m)	/kɔy/ H	kóé-(n)	kóy-yár	‘cook’
(n)	/fɛð/ H	féð-(n)	féð-ɟár	‘release’
(o)	/pa/ M	pāā	pā-ɟár	‘guard’

Perfect bound morphemes have no underlying tone and Mid, High, or Low tone is assigned to the perfect morphemes with vowels according to subject person inflection. In the third singular incomplete perfect verbs of (80), the third singular High tone assigned to the perfect suffix becomes Mid following Low tone {M9} in (c,d,f).

(82) **Incompletive relative clause paradigm ‘___ who files is good.’**

(a) INCP.RC (Unmarked for definiteness)						(b) INCP.RC=RDM (Definite)	
āān	ná	ḡāḡn	á	wēḡān	1sN	ḡāḡn=é	1sN
ōōn	ná	ḡāḡn	ú =	wíḡōn	2sN	ḡāḡn=é	2sN
ēēn	ná	ḡāḡn	(é)	wēḡān	3sN	ḡāḡn=é	3sN
āggá	nà	ḡāḡn	āgg	wíḡggō	1pN	ḡāḡn=è	1pN
ōggó	nà	ḡāḡn	ōgg	wíḡggō	2pN	ḡāḡn=è	2pN
ēggà	nà	ḡāḡn	(ēggà)	wíḡggō	3pN	ḡāḡn=è	3pN
PRON	REL	file.	PRON	good		file.	
INCP						INCP=RDM	

Similarly, paradigms of other verb forms in relative clauses are given in (83). Relative clause incompletive, completive, and continuous past verbs unmarked for definiteness do not have person tone marking assigned to the final syllable, but subjunctive forms do. In each of the verb forms in definite relative clauses, a definite clitic with High tone marks singular person subject and a definite clitic with Low tone marks plural person subject. Subjunctive relative clause definite verbs add a long clitic =ÉÉ, =ĒĒ, whereas other verbs add a short clitic. In past continuous relative clause forms, the definite clitic =É does not elide the continuous suffix vowel -a of ḡāḡn-ā. =é ‘file-CONT.P.RC=RDM’ and is an exception to {M1} of 3.1.

(83) **Completive, continuous, subjunctive relative clause paradigms of ‘file’**

COMP.	COMP.	CONT.P.	CONT.P.	SBJV.	SBJV.	
RC	RC=RDM	RC	RC=RDM	RC	RC=RDM	
ḡāḡn-sá	ḡāḡn-s = é	ḡāḡn-ā	ḡāḡn-ā. = é	ḡájā	ḡáj = ēé	1sN
ḡāḡn-sá	ḡāḡn-s = é	ḡāḡn-ā	ḡāḡn-ā. = é	ḡájā	ḡáj = íí	2sN
ḡāḡn-sá	ḡāḡn-s = é	ḡāḡn-ā	ḡāḡn-ā. = é	ḡáj-ḡá	ḡáj-ḡ = éé	3sN
ḡāḡn-sá	ḡāḡn-s = ê	ḡāḡn-ā	ḡāḡn-ā. = è	ḡáj-ḡā	ḡáj-ḡ = èè	1pN
ḡāḡn-sá	ḡāḡn-s = ê	ḡāḡn-ā	ḡāḡn-ā. = è	ḡáj-ḡā	ḡáj-ḡ = ìì	2pN
ḡāḡn-sá	ḡāḡn-s = ê	ḡāḡn-ā	ḡāḡn-ā. = è	ḡáj-ḡā	ḡáj-ḡ = èè	3pN

As shown in (84), the relative clause singular definite clitic =É attaches to the surface forms of (non-relative clause) incompletive forms rather than to unmarked relative clause incompletive verbs, which are infinitive forms. If the clitic were attached to infinitive forms, among other differences, the long vowel of *cī*. =í ‘wear=RDM’ in (c) would be short and the geminate *gg* would surface.

(84) **Relative clause singular definite clitic =É on incomplete verbs with various root-final segments**

			Unmarked	Definite	
	INCP 3sN		INCP.RC 3sN	RDM INCP.RC 3sN	
			(INF)		
(a)	/ab/ L	àḥ	àb-b	àḥ. = ē, àw = ē	‘sit’
(b)	/kaɣ/ H	káé	káj-ɣ	káē. = é, kāy = é	‘bring’
(c)	/ciɡ/ M	cīī	cīɡ-g	cīī. = í	‘wear’
(d)	/cuɖ/ M	cūḍ	cūḍ-ɖ	cūḍ = í	‘climb’
(e)	/lɔf/ L	lǎf	lǎf-f	lǎf = ē	‘do magic’
(f)	/las/ M	lās	lās-s	lās = é	‘roll-up’
(g)	/ɲam/ M	ɲām	ɲām-m	ɲām = é	‘break’
(h)	/ɡɔn/ L	ɡɔ̃n, ɡòḥ	ɡò̃n-n	ɡò̃n = ē, ɡòḥ = ē	‘grab’
(i)	/ɡuɲ/ L	ɡũɲ	ɡũɲ-ɲ	ɡũɲ = í	‘agree’
(j)	/mal/ M	māl	māl-l	māl = é	‘gather’
(k)	/wɛr/ M	wēr	wēr-r	wēr = é	‘watch’
(l)	/ɲaw/ H	ɲáḥ-(n)	ɲáw-w	ɲáḥ. = é, ɲáḥ-n = é	‘request’
(m)	/kɔy/ H	kóé-(n)	kóy-y	kóē. = é, kóē-n = é	‘cook’
(n)	/fɛð/ H	féð-(n)	féð-ð	f éð = é, f éð-n = é	‘release’
(o)	/pa/ M	pāā, pāḍ	pā-ɖ	pāā. = é, pā-ɖ = é	‘guard’
(p)	/bɛɛ/ L	bèē-(n)	bèè	bèè. = ē	‘say’

In (85), third singular complete and incomplete verbs of definite and unmarked relative clauses are shown. The unmarked complete verbs have Mid tone assigned to the complete suffix which assimilates to preceding Low {M9} in (c,d,f). For unknown reasons, High tone is assigned to the complete suffix of Mid root tone melodies as in (b). Unlike complete verbs of nuclear clauses, in complete verbs of definite relative clauses, the complete suffix tone remains even though the suffix vowel is elided. The underlying High tone of the definite clitic lowers to Mid when assigned along with complete Low tone {M9} in (c,d,f). In unmarked incomplete forms, there is no evidence of Mid tone added to the root. However, Mid tone surfaces on incomplete roots with High root tone melodies as in (a) when

(85) **Relative definite marker clitic =É on third singular complete and incomplete verbs**

	Root tone	COMP.RC 3sN	RDM COMP.RC 3sN	INCP.RC 3sN	RDM INCP.RC 3sN	
(a)	H	fīr-sḥ	fīr-s = ɪ	fīr	f ɪr = í	‘smell’
(b)	M	cōr-sḥ	cōr-s = é	cōr	cōr = é	‘help’
(c)	L	ḍūr-sḥ	ḍūr-s = ɪ	ḍūr	ḍūr = í	‘bury’
(d)	HL	pâr-sḥ	pâr-s = ɪ	pâr	pâr = í	‘attach’
(e)	HM	bēl-ḍā	bēl-ḍ = é	bēl	bēl = é	‘name’
(f)	ML	dōḥs-sā	dōḥs-s = ɛ̃	dōḥs	dōḥs = ē	‘make-big’
(g)	MH	kās-sḥ	kās-s = ɪ	kāḥ	kāḥ = í	‘strike’

the relative definite clitic is added.

In (86), third singular continuous and subjunctive verbs of definite and unmarked relative clauses are shown. The unmarked continuous verbs have MHM tone assigned to the continuous suffix. These verbs have the same tonal alternations as first singular continuous past verbs in non-relative clauses shown in 9.8.6. When the definite clitic attaches as a second syllable, juxtaposed to the continuous suffix syllable (not applying {M1}), the final Mid tone of the continuous suffix assigns to the clitic in (a,d-g). The underlying High tone of the continuous suffix then surfaces in (d,f).

(86) **Relative definite marker clitic =É on third singular continuous past and first singular subjunctive verbs**

	Root tone	CONT.P.RC 3sN	RDM CONT.P.RC 3sN	SBJV.RC 1sN	RDM SBJV.RC 1sN	
(a)	H	fír-ṣ̃	fír-ā. = ɪ	fír-ṣ̃	fír = ɪí	‘smell’
(b)	M	cōr-ā	cōr-ā. = é	cór-ṣ̃	cór = ēé	‘help’
(c)	L	ḍùr-ṣ̃	ḍùr-ṣ̃. = í	ḍùr-ṣ̃	ḍùr = ɪɪ	‘bury’
(d)	HL	pâr-ṣ̃	pâr-ṣ̃. = ɪ	pâr-ṣ̃	pâr = ɪɪ	‘attach’
(e)	HM	bél-ā̃	bél-ā. = é	bél-ā	bél = ēé	‘name’
(f)	ML	dṣṣs-ā	dṣṣs-ā. = é	dṣṣs-ā	dṣṣs = ēē	‘make-big’
(g)	MH	kṣṣ-ṣ̃	kṣṣ-ṣ̃. = ɪ	kṣṣ-ṣ̃	kṣṣ = ɪí	‘strike’

First singular subjunctive verbs of relative clauses shown in (86) have similar tone assignment to completive verbs of relative clauses. Unmarked subjunctive verbs have Mid tone assigned to the subjunctive suffix which assimilates to preceding Low {M9} in (c,d,f). The underlying High tone of the definite clitic lowers to Mid when assigned along with subjunctive Low tone {M9} in (c,d,f).

10.10 Verbal nouns

Verbal nouns can be modified by adjectives, just as other nouns, and have singular and plural forms. The verbal nouns of (87a,c) are modified by singular adjectives, whereas the nouns of (b, d) are modified by plural adjectives.

(87) **Verbal noun examples**

- (a) **kṣr** é ɽāāḍā ná kúr-s = ɪ wēḍán
 speaking GP grandmother.GEN REL /kór/speak-COMP = RDM good.SG
 ‘Grandmother’s word is good.’
- (b) **kṣr-ēēgg** é ɽāāḍā ná kúr-s = ɪ wîḍ-gg = ḍ
 speaking-PL GP grandmother. REL /kór/speak- good-PL
 GEN COMP = RDM = COP
 ‘Grandmother’s words are good.’

- (c) **bāð** óñn wēđán (d) **bāð-agg** ónəgə wíð-ggə
 throwing 1sPs good.SG throwing-PL 1sPp good-PL
 ‘My throw is good.’ ‘My throws are good.’

The verbal noun is not used as such in counting as are other nouns. It is not possible to say ‘one throw’ or ‘many throws’. Rather, the countable action is communicated with the verb and the word *ǝgg* ‘place/time’ as in the phrases of (88).

- (88a) á bās-sā ǝgg tāmán (b) á bās-sā ǝgg tǎlg
 1sN throw- time one 1sN throw- time many
 COMP
 ‘I threw once.’ ‘I threw many times.’

Singular verbal nouns have the same segmental form as the incomplete, although often with different tone. Plural verbal nouns are formed by attaching one of four clitics to the incomplete surface form, depending on the surface-final segment, and altering the tone.

Table 53: Plural verbal noun clitics

	VN PL clitic
Surface-final sonorant, vowel	= gg
Underlying root-final obstruents	= Agg
Underlying root-final sonorant	= Agg, = EEgg, = AAgg

As shown in (89), singular verbal nouns have the same segmental forms as the incomplete, which optionally attach the suffix *-n* to roots with root-final approximants *y*, *w* and some root-final vowels. The plural clitic =gg is attached to singular incomplete forms with surface-final sonorants or vowels. If the plural marker were attached to underlying-final segments, among other differences, the

(89) **Plural verbal noun clitic =gg**

	INF	INCP 3SN	VN SG	VN PL	
(b)	/dɔɣ/ L	dɔɣ-ɣ	dɔɛ	dɔɛ = gg	‘throw stones’
(c)	/cag/ H	cág-g	cáá	cāā = gg	‘bathe, wash’
(g)	/kɔm/ H	kóm-m	kóm	kóm = g	‘cut, destroy’
(h)	/cɛɛn/ L	cɛɛn-n	cɛɛn	cɛɛn = g	‘play’
(i)	/ɲaɲ/ M	ɲāɲ-ɲ	ɲāɲ	ɲāɲ = g	‘file, sand’
(j)	/bɛl/ L	bɛl-l	bɛl	bɛl = g	‘hit, beat’
(k)	/ar/ M	ār-r	ār	ār = g	‘scrape’
(l)	/ɲaw/ H	ɲáw-w	ɲāɔ-(n)	ɲāɔ-(n) = g	‘request’
(m)	/kɔy/ H	kóy-y	kɔɛ-(n)	kɔɛ-(n) = g	‘cook’
(o)	/ba/ M	bā-ɖ	bāā	bāā = gg	‘throw, hit’
(p)	/bɛɛ/ L	bɛɛ	bɛɛ-(n)	bɛɛ-(n) = g	‘say’

long vowel of *bāā* = *gg* ‘throw=PL’ in (o) would be short.

The plural clitic =*Agg* is attached to root-final obstruents *ɟ*, *ʃ*, *s* as in (90a-c), to the sonorants *ʃ* and *ɲ* as in (d-e), and occasionally to other sonorants as in (f-i). For unknown reasons, the segment *g* is inserted before root-final *ɟ* in plural verbal nouns such as *cūgɟ* = *ūg* ‘climb’ in (a).

(90) **Plural verbal noun clitic =*Agg***

	Root	INF	INCP 3SN	VN SG	VN PL	
(a)	/cuɟ/ M	cūɟ-ɟ	cūɟ	---	cūgɟ = ūg	‘climb’
(b)	/lɔf/ L	lɔf-f	lɔf	lɔf-ɔ	lɔf = ɔgg	‘do magic’
(c)	/las/ M	lās-s	lās	lās	lās = āgg	‘roll-up’
(d)	/kuuð/ H	kūūð-ð	kūūð	kūūð	kūūð = ūgg	‘build’
(e)	/gaɲ/ L	gāɲ-ɲ	gāɲ	gāɲ	gāɲ = àg	‘laugh’
(f)	/ber/ H	bér-r	bér	bēr	bēr = āgg	‘tell’
(g)	/bɛl/ M	bēl-l	bēl	bēl	bēl = āgg, bēl = g	‘have, possess’
(h)	/ɲam/ H	ɲám-m	ɲám	ɲāɔ-(n)	ɲām = āgg	‘want, love’
(i)	/bɔn/ L	bɔn-n	bɔn	bɔn	bɔn = ɔgg	‘wait’

The verbal noun clitic =*Agg* attaches to the incompletive surface form such as *ɲám* ‘want’ instead of to the singular verbal noun surface form *ɲāɔ-(n)*, as evidenced by the *m* in *ɲām* = *āgg*.

A few plural verbal nouns with root-final sonorants attach the clitics =*AAgg* or =*EEgg*.

(91) **Plural verbal noun clitic =*AAgg***

	Root	INF	INCP 3SN	VN SG	VN PL	
(a)	/ɲɛl/ H	ɲél-l	ɲél	ɲél	ɲél = āāg	‘know’

(92) **Plural verbal noun clitic =*EEgg***

	Root	INF	INCP 3SN	VN SG	VN PL	
(a)	/kɔr/ H	kór-r	kór	kɔr	kɔr = ēēgg	‘speak, say’
(b)	/kaam/ HL	káām-m	káām	kàðáàm	kàðáám = èègg	‘work, deal’

Verbal noun clitics have no underlying tone. However, the root tone melody changes in verbal noun forms, as seen by the tone changes in table 54. Verbs with root tone melodies L, HL, and ML have ML tone melody in verbal nouns. Verbs

Table 54: Verbal noun tone changes

Root tone melody	Verbal noun tone melody
L, HL, ML	ML
all other melodies	M

with all other root tone melodies have Mid tone in verbal nouns.

In (92), the clitic =*Agg* is attached to verbal nouns with various root tone melodies. Verbal nouns have tone melodies as described in table 54. Since the clitic =*Agg* has no underlying tone, the Low tone of ML root melodies reassigns to the clitic {M6} in (d,f) and Mid tone spreads to the clitic in other forms {M5}.

(92) **Verbal noun plural clitics =*Agg*, =*gg***

	Root tone	INF	VN tone	VN SG	VN PL	
(a)	H	pál-l	M	pāl	pāl = āgg, pāl = g	‘cut’
(b)	M	bēl-l	M	bēl	bēl = āgg, bēl = g	‘possess’
(c)	L	f ēl-l	ML	f ēl	fēl = āgg, f ēl = g	‘tell’
(d)	HL	pîr-r	ML	pîr	pîr = ðgg, pîr = g	‘deceive’
(e)	HM	bēl-l	M	bēl	bēl = āgg	‘name’
(f)	ML	dõðs-s	ML	---	dõgs = ðgg	‘stand’
(g)	MH	kõð-ð	M	kõn	kõð = ðgg	‘strike’

10.11 Adjectival verbs

Adjectives can be used as verbs, although not always with the same syntax or morphology as true verbs, as compared in 4.3. The long form of the subject pronoun precedes the adjectival verb instead of the short subject pronoun as in true verbs. The plural adjective suffix -*gg* and copular clitic =*A* attach to adjectival verbs of plural persons. These features mark adjectival verbs as being different than active verbs. The verbs of (93) have subject tone inflection (final Mid for second person, final High for third singular, final Low for third plural) and [+ATR] second person forms as do other verbs. However, in some adjectival verbs, person inflection is not as regular.

(93) **Adjectival verb paradigms**

(a)	‘___ am/are/is clean.’			(b)	‘___ am/are/is beautiful.’		
	āān	bēr	1sN		āān	kāyāār	1sN
	õõn	bîr	2sN		õõn	kõyóõr	2sN
	ēēn	bér	3sN		ēēn	kāyáár	3sN
	āggá	bér-g = ā	1pN		āggá	kāyáár-g = ā	1pN
	õggó	bîr-g = õ	2pN		õggó	kõyóór-g = õ	2pN
	ēggà	bér-g = à	3pN		ēggà	kāyáár-g = à	3pN

Adjectival infinitive forms often surface the same as adjectives modifying singular nouns. Underlying-final geminate segments of infinitive forms surface as single segments. Many infinitive forms of adjectives such as (94e, i, j) are irregular in that they do not have a final geminate consonant but a different suffix.

(94) **Adjectival infinitive forms**

	ADJ SG	ADJ PL	INF	
(a)	bér	bér-g	bēr-r	‘clean’
(b)	gààl	gààl-g	gààl-l	‘far’
(c)	áè	áè-gg	àɣ-ɣ	‘sour’
(d)	cúú	cúú-g	cūū	‘sweet’
(e)	fāā	fān-g	fān-g	‘old’
(f)	bāṇḍāl	bāṇḍāl-g	bāṇḍāl-l	‘weak’
(g)	kóófār	kóófār-g	kòófār-r	‘thin’
(h)	kāyáár	kāyáār-g	kāyáár-r	‘beautiful’
(i)	wēḍán	wíḍ-gg	wēṇḍá-ḍ	‘good’
(j)	lūsú	lūsú-gg	lùùs-ṣḍ	‘hot’
(k)	ḍèṁṁ	ḍèṁṁ-gg	ḍèḍṁ-m	‘blind’
(l)	ṇāán	ṇāā-lgég	ṇāān-n	‘young’

In (95), first and third singular and second and third plural forms of incomplete adjectival verbs are shown. The suffix *-n* is common in singular person suffixes, and the suffix *-gg* is required in all plural person suffixes. Although third singular High tone and third plural Low tone generally occur word-finally on adjectives, second person Mid tone is not as regular on second plural forms, as second plural forms of (b,c,h) have final Low tone. Further, second person [+ATR] quality is not as regular as in true verbs, as second plural forms of (b,c,g) have [-ATR] quality ({M3} is not applied). Among the adjectival verbs attested, those of (95) are the most regular in final segment alternations, tone and vowel quality. Others are even more irregular.

(95) **Incomplete person forms of adjectival verbs**

	INF	INCP 1sN	INCP 3sN	INCP 2pN	INCP 3pN	
(a)	bēr-r	bēr	bér	bír-g = ɔ̃	bér-g = à	‘clean’
(b)	gààl-l	gààl	gàāl	gààl-g = à	gààl-g = à	‘far’
(c)	àɣ-ɣ	áè-n	áé-n	áè-gg = à	áè-gg = à	‘sour’
(d)	cūū	cúū-n	cúú-n	cú-gg = ū	cú-gg = ù	‘sweet’
(e)	---	î-n	íí-n	î-gg = ɔ̃	î-gg = ɔ̃	‘heavy’
(f)	fān-g	fāān	fāān	fān-g = ɔ̃	fān-g = à	‘old’
(g)	bāṇḍāl-l	bāṇḍāl	bāṇḍāl	bāṇḍāl-g = ā	bāṇḍāl-g = à	‘weak’
(h)	kòófār-r	kóófār	kóófār	kúúfār-g = ɔ̃	kóófār-g = à	‘thin’
(i)	kāyáár-r	kāyáār	kāyáár	kāyáár-g = ɔ̃	kāyáár-g = à	‘beautiful’
(j)	wēḍán-ḍ	wēḍán	wēḍán	wíḍ-gg = ɔ̃	wíḍ-gg = ɔ̃	‘good’
(k)	lùùs-ṣḍ	lūsū-n	lūsú-n	lūsú-gg = ū	lūsú-gg = ù	‘hot’
(l)	ḍèḍṁ-m	ḍèḍṁ-ṁ	ḍèḍṁ-ṁ	ḍèḍṁ-gg = ɔ̃	ḍèḍṁ-gg = ɔ̃	‘blind’
(m)	ṇāān-n	ṇāān	ṇāān	ṇāā-lgíg = ɔ̃	ṇāā-lgég = à	‘young’

Adjectival verbs have various grammatical forms such as the incomplete, complete, and continuous past forms of (96).

(96) **Third singular incomplete, completive and continuous past adjectival verbs**

	INF	INCP 3SN	COMP 3sN	CONT.P 3sN	
(a)	bēr-r	bér	bēr-sá	bér-án	‘clean’
(b)	gààl-l	gàāl	gààl-ḍà	gààl-ān	‘far’
(c)	àj-j	áẽ-n	àj-jā	āy-án	‘sour’
(d)	cūū	cúú-n	cúū-n-sú	cúú-n-ón	‘sweet’
(e)	---	íí-n	ìj-jḍ	íy-ḥn	‘heavy’
(f)	fān-g	fāān	fān-gā-sā	fāān-án	‘old’
(g)	bānḍāl-l	bánḍāl	bānḍāl-sá	bánḍāl-án	‘weak’
(h)	kòḍfār-r	kóóf ăr	kòḍfār-sā	kóófār-án	‘thin’
(i)	kāyáár-r	kāyáár	kāyáár-sá	kāyáár-án	‘beautiful’
(j)	wēnḍá-ḍ	wēḍán	wēnḍá-sá	wēḍán-án	‘good’
(k)	lùùs-ḍḍ	lūsú-n	lūsú-n-sú	lūsú-n-ón	‘hot’
(l)	ḍḍèḿ-m	ḍḍèḿḍ-n	ḍḍèḿḍ-sḍ	ḍḍèḿḍ-gg-ón	‘blind’
(m)	nāān-n	nāān	nāān-sá	nāān-án	‘young’

to such phrases.

(2) **Inanimate accompaniment preposition** *ē* ‘with’

- (a) *ē* *máà* *īīŋ* *ē* *àn-n* *mṣsḍr* *ṣṣl*
 3sN prides.INF 3sR 3sN stay-INF horse up
 ‘... taking pride in himself as he sits up on the horse’

ē *páré = n* *é* *mṣjñl = à* *ḍ-éès*
 with skin.bag = DEF GP /mṣjñl/devil.GEN = DEF PP-hand.3sPs
 with an animal-skin bag having demonic power in his hand.’ (Minj14-15)

- (b) *ānēndá* *Tél* *ē* *kúnḍ = ú* *ē* *ád* *ē* *wáēḍá*,
 then God 3sPs heart = DEF 3sN becomes with joy
 ‘Therefore God will be pleased
 (lit. God’s heart becomes with joy).’ (Womn17)

11.3 General preposition

The preposition *é*, *í* ‘to, from, in, at, by’ introduces adjunct phrases that indicate goal, time, location, or instrument/source. Goal phrases can be used along with a following locative adverb *te* ‘there’ as in (3a) or along with a preceding adverbial locative *dumuun* ‘far’ as in (b). The first prepositional phrase *é nāāndá* ‘in day’ of (b) has the role of time. In (c), the prepositional phrase has the role of location,

(3) **General preposition** *é*, *í* (GP)

- (a) *gāl* *fñḍi* *bḥgsṓn = in* *líjji* *é* *kṣrtūum* *tè*.
 just Fandi caught.by-them arrived GP Khartoum here
 ‘Fandi was captured by them and brought here to Khartoum.’ (Fand6)
- (b) *á* *wāj-jā* *é* *nāāndá* *mān* *ḍūmùùn* *é* *ḍàal*
 1sN went-COMP GP day certain towards GP (valley name)
 ‘One day I went to Dal Valley.’ (Jooj1)
- (c) *āgg* *bij* *āgg* *gḍl-g = ṣ* *nà* *dāāgg* *èèn* *é* *jṣṣgg*
 1pN left 1pP friend-PL = DEF REL.PL two 3sN GP behind
 ‘We left our other two companions behind.’ (Thng5-6)
- (d) *é* *ḍḍj-j āāggá* *é* *mīḍ-óg* *fṣrṣj* *wá* *bà = i*
 3sN stone-INF 1pA GP stone-PL few not oh = SBO
 ‘When it pelted us with a lot of stones, ...’ (Thng20)
- (e) *gàar* *cúá* ... *nām-án = ē* *é* *káé-gg = à*
 pork sweet /nam/eat-CONT.P = PAS.A GP witchdoctor-PL = DEF
 ‘Sweet pork ... was being eaten by witchdoctors.’

This preposition is also used in the formation of two conjunctions: *é gārā* ‘when, while (lit. by place.DEF)’, *é kārā* ‘because (lit. by word.DEF)’. Conjunction is another lexical category and discussed in 15.2. In 13.4, it will be shown that the general preposition introduces prepositional phrases used as adjuncts indicating time *é nāand* = *á yāan* ‘another day (lit. at day another)’.

(4) **General preposition \mathcal{E}, \mathcal{I} (GP)**

- In (4c), there are three possessors (*sālādā* ‘hyena’, *âld* ‘fox’, *jëgg* ‘things’) of a single item (*càdr néén* ‘this tale’) introduced by the general preposition *é* (GP) with High tone and two animate accompaniment prepositions *è* ‘with’ with Low tone. There is no animate accompaniment clitic =*Ê* attached to the nouns *âld* ‘fox’ and *jëgg* ‘things’ possibly because the general preposition *é* (GP) with genitive use has scope over them, causing them to undergo genitive tone change. The object *lēēlēggā* ‘grasses’ in the genitive phrase *jëgg é lēēlēggā* ‘things of grasses’ is

11.5 Adverbs functioning as prepositions

Some adverbs of direction have the syntactic function of prepositions, introducing a noun phrase. In (7a), the adverb *ḡūmùùn* ‘towards’ introduces the noun phrase *wāālg* ‘water.source in’. Sometimes adverbs of direction introduce other adverbs of direction as in (b), where the first adverb functions as a preposition, and the second functions as a noun phrase. In both example (a) and (b), the prepositional phrase functions as an adjunct, describing the location of the action.

(7) Adverbs of direction functioning as prepositions

- (a) \bar{e} dōs \bar{e} wāḡḡ **ḡūmùùn** wāālg = g
 3sN started 3sN go towards water.source = in
 ‘He set out for the well.’ (Goat2)

- (b) $\bar{i}igg = \acute{o}$ \bar{e} māl = ínō **fān** ṭād
 milk = DEF 3sN gathered = 3sD on down
 ‘Milk accumulated for him underneath.’ (Nyee24)

12 Body part locatives

Locative phrases can consist of a noun of reference followed by a body part functioning as a locative, which in this thesis is called a ‘body part locative’. Body part locatives are analyzed categorically as locatives in that the original body part noun has become a grammaticalized form which no longer refers to person. In 5.2.4, it was shown that the vowels of inherently possessed body part nouns correspond to the person possessing the nouns. Such body parts used as locatives may have generalized first or second person vowels when used for the location of third person nouns.

- (1) ē àn ūfū ʒʒl dēēnē.
 3sN staying tree up only
 ‘... as he remained in the tree.’ (Nyee35)

In (1), ʒʒl ‘up’ is a body part locative with the same segmental form as ʒʒl ‘your head (2sPs)’. The noun ʒʒl ‘your head’ is a second person singular inherently possessed singular body part requiring a person marker vowel. In contrast, the locative ʒʒl ‘up’ is used with the third singular noun ūfū ‘tree’, and the vowel ē no longer refers to person. In this way, the body part has become grammaticalized as a locative rather than as a body part. The second person vowel of the locative form ʒʒl ‘up’ is random in that other body part locatives use first person or third person vowels.

As will be discussed in 14.9.3, possession of body part nouns is different than for other nouns in that the possessor precedes the body part (*ʒēn lúq* ‘person’s leg’) instead of following and in the genitive case (*gāḍááē é ʒēn* ‘basket of person.GEN’). The construction of locative phrases with body part locatives resembles that of possessed body parts—the body part follows the possessor and the body part locative follows the noun of reference. However, since ʒʒl ‘up’ and other singular body part locatives can describe the location of any singular person noun or pronoun, the locative is a grammaticalized form which no longer refers to any person.

In (2), body part nouns and the corresponding body part locatives are listed in both singular and plural forms along with their meanings. All body part locatives have the same segmental form as the corresponding body part noun; however, locatives (a-c) which are inherently possessed body parts have different tone than the corresponding body part nouns. Locatives which are inherently possessed body parts include a person marker vowel only because the body part cannot occur without one. The person marker vowel does not represent any person in its locative usage unless the prepositional prefix *q-* is attached, as discussed shortly. As to which of the three vowel-person forms the grammaticalized body part employs, appears random. The locative of (a) uses the third person vowel, the locative of (b)

uses the second person vowel, and the locative of (c) can use either the first or third person vowel in singular locative form, but only the first person vowel in plural form.

(2) **Body parts and corresponding body part locatives**

	Noun	Noun		LOC	LOC	
	SG	PL		SG	PL	
(a)	ēēlg	ìil-g	‘stomach.3P’	éélg	îilg	‘in, inside of’
(b)	ōōl	ùùl-g	‘head.2P’	óól	úùlg	‘above, over, on’
(c)	āāp/	ààp-g/	‘back.1P/	ááp/	ôàp	‘behind, in back of’
	ēēp	ìip-g	back.3P’	éép		
(d)	bōl	bàl-g	‘vagina’	bōl	bàlg	‘under, beneath’
(e)	mūū	mùù-gg	‘face’	mūū	mùùgg	‘before, in front of’
(g)	bēp-ɲ	bēp-āāgg	‘side’	bēp	bēpāāgg	‘next to, beside’

In each example of (3), a body part locative follows the noun of reference. The body part locative agrees in number with the head noun—plural in (a) and singular in (b-d).

(3) **Body part locatives**

- (a) ú=ɲíl gār=ā súùgg **îilg** é gārā fēðáná jègg=ā
 2pN=know place=DEF market in where placed things=DEF
 ‘Do you know the place in the market where things . . .’ (Fand27)
- (b) ē mǎā īīŋ ē àn mōsōr **ōōl**
 3sN prides 3sR 3sN stay horse up
 ‘. . . taking pride in himself as he sits up on the horse.’ (Minj14)
- (c) fāā ná bēl cōðŋðð.-èèn, ē àn gāi **bàl**
 old REL.SG called Joojo-3sO 3sN staying tree.type beneath
 ‘An old man named Joojo was sitting under a Gai tree.’ (Jooj3)
- (d) ē rāgg fōl **mūū**
 3sN stop hole front
 ‘He stopped in front of the hole.’ (Goat17-18)

When body part locatives are used with pronouns of reference instead of nouns of reference, the object pronoun is attached to the verb and the prepositional prefix *d-* ‘to’ attaches to the body part locative, as will be discussed in 11.4. Body part locatives with pronominal reference are also called locative prepositional pronouns, as discussed in 5.7.

In (4), the third singular object pronoun =*ɪ* attaches to the verb. The prepositional prefix *d-* marks the body part locative as indicating a pronoun as well as a location,

and thus the vowel *εε* indicates the third person singular pronoun (*ɔ̄-έέη* ‘to behind him’).

- (4) *ālɔ̄ = á ē pârɔ̄ = ì ɔ̄-έέη*
fox = DEF 3sN jump = 3sAM PP-behind.3sO
‘Fox jumped behind him.’ (Goat12)

If instead the meaning were ‘Fox jumped behind (over) you’, the construction *ɔ̄-όόη* (PP-behind.2sO; locative prepositional pronoun) would have been used. If the meaning were ‘Fox jumped on his back’ the construction *ɔ̄-έέη* (PP-back.3sPs; possessed body part) with Low tone would have been used [see also (6d) of 11.4]. If the meaning were ‘Fox jumped behind the tree’, the construction *pârɔ̄ɔ̄ ũfú έέη* (jump tree behind; body part locative) would have been used.

Locative phrases are adjuncts of the verb and are equivalent in function to adverbs of place such as *ʔε* ‘there, here’ discussed in 13.3. However, since locative phrases have a different construction than adverbs of place, they are analyzed as separate lexical categories.

Although body part locatives are analyzed as separate morphemes, the initial vowels of some body part locatives are sometimes elided, undergo [ATR] changes, and undergo tone changes similar to those of clitics, depending on the nouns they follow. A summary of these changes is given here with reference to the list of (5), and examples follow in the next sections. Elision and [ATR] changes only occur in the singular body part locative of (5a) and to a lesser extent in the singular locatives of (b-c). The changes mostly depend on the speed of the utterance, but also on the final segments of the nouns the locatives follow. Tonal changes in body part locatives nearly always take place, regardless of the speed of utterance. However, there are no tonal changes for the singular locative of (g) and the plural locatives of (d-g) with underlying initial Low tone. The examples that follow represent fast speech and demonstrate the most possible changes.

(5) **Body part locatives**

	LOC SG	LOC PL	
(a)	έέlg	ñlg	‘in, inside of’
(b)	όόl	ũlg	‘above, over, on’
(c)	άάη/έέη	σάηg	‘behind, in back of’
(d)	bāl	bàlg	‘under, beneath’
(e)	mũũ	mùùgg	‘before, in front of’
(g)	bèηʔ	bèηnāgg	‘next to, beside’

12.1 Segmental formation of body part locatives

The body part locatives *έέlg* ‘in’ and *όόl* ‘above’ attach to singular nouns with

stem-final approximant *ð*, evidenced by the vowel quality change of the locative vowel in (6b) and (d). However, the body part locative *ááɲ/ééɲ* ‘behind’ is separate from singular nouns as vowel quality of the locative never changes.

(6) **Singular body part locatives *éélg* ‘in’, *ɔɔl* ‘above’, *ááɲ/ééɲ* ‘behind’**

on singular nouns with stem-final *ð*

	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
(a)	jááð	jááð = éélg	jááð = ɔɔl	jááð ááɲ	jááð ééɲ ‘old clothes’
(b)	mãðð	mãðð = ílg	mãðð = úúl	mãðð ááɲ	mãðð ééɲ ‘grandfather’
(c)	mēēð	mēēð = éélg	mēēð = ɔɔl	mēēð ááɲ	mēēð ééɲ ‘tree type’
(d)	kūūð	kūūð = ílg	kūūð = úúl	kūūð ááɲ	kūūð ééɲ ‘shadow’
(e)	yààð	yààð = ēēlg	yààð = ɔɔl	yààð āāɲ	yààð ēēɲ ‘sister’

Body part locatives attached to monosyllabic underlying approximant-final stems are shown in (7). In (a-e), the singular body part locatives either cause the underlying-final approximant to surface as such or elide the approximant. The vowel of the locatives *éélg* ‘in’ and *ɔɔl* ‘above’ take the [ATR] quality of the noun to which they attach. However, the body part locative *ááɲ/ééɲ* ‘behind’ is separate from singular nouns as vowel quality of the locative does not change in (f-h).

(7) **Singular body part locatives *éélg* ‘in’, *ɔɔl* ‘above’, *ááɲ/ééɲ* ‘behind’**

on monosyllabic underlying approximant-final stems

	Stem-final	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
(a)	aɔ /aw/	káð	kâw = ēēlg	kâ. = ɔɔl	kâw āāɲ	‘hyena’
(b)	aaɔ /aaw/	bààð	bààw = ēēlg	bàà. = ɔɔl	bààw āāɲ	‘father’
(c)	ɛɔ /ɛw/	bēð	bēw = ēēlg	bē. = ɔɔl	bēw āāɲ	‘tree type’
(d)	aɛ /ay/	tāè	tâ. = ēēlg	tâ = ɔɔl	tây āāɲ	‘giraffe’
(e)	aaɛ /aay/	sāāē	sāā = éélg	sāā. = ɔɔl	sāāy ááɲ	‘coconut’
(f)	əðì /əɔy/	màðì	màð.í = ílg	màðì. = ūūl	màðì āāɲ	‘farm fence’
(g)	ui /uy/	mūī	mū.í = ílg	mūī. = úúl	mūī ááɲ	‘wildebeest’
(h)	uui /uuy/	ɲūūì	ɲūū. = ílg	ɲūūì. = ūūl	ɲūūì āāɲ	‘leopard’

Similarly, in monosyllabic long vowel-final stems, the vowel of the locatives *éélg* ‘in’ and *ɔɔl* ‘above’ take the [ATR] quality of the noun to which they attach, but *ááɲ/ééɲ* ‘behind’ is separate.

(8) **Singular body part locatives *éélg* ‘in’, *ɔɔl* ‘above’, *ááɲ/ééɲ* ‘behind’**

on monosyllabic long vowel-final stems

	Stem-final	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
ɛ	rēē	rēē. = éélg	rēē. = ɔɔl	rēē ááɲ	rēē ééɲ	‘cotton’
a	māà	māà. = ēēlg	māà. = ɔɔl	māà āāɲ	māà ēēɲ	‘house’
ɔ	tóó	tóó. = éélg	tóó. = ɔɔl	tóó ááɲ	tóó ééɲ	‘cow’

Stem-final	N SG	N SG	N SG	N SG		
		‘in’	‘above’	‘behind’		
i	ʃĩ	ʃĩ. = ɪĩlg	ʃĩ. = ɪũl	ʃĩ āāɲ	ʃĩ ēēɲ	‘turkey’
ə	wḁḁ	wḁḁ. = ɪĩlg	wḁḁ. = ɪũl	wḁḁ ááɲ	wḁḁ ēēɲ	‘shade’
u	bùù	bùù. = ɪĩlg	bùù. = ɪũl	bùù āāɲ	bùù ēēɲ	‘chicken coop roof’

The body part locative *éélǵ* ‘in’ can attach to polysyllabic singular nouns with stem-final vowel. Following some nouns with final long vowel such as in (9a,c), the initial long vowel of the locative is elided. With other nouns such as (b) there can be partial elision. There can also be elision of noun short-final vowels as in (g,i,j). In (d,f,h,k), the locative is separate, evidenced by the vowel quality of the locative not changing to [+ATR]. In (e), it is ambiguous whether the locative attaches or not. The locative *śśl* ‘above’ attaches to vowel-final stems to a lesser extent than *éélǵ*—in these examples it is only attached in (j). The locative *ááɲ/ēēɲ* ‘behind’ is always separate.

(9) **Singular body part locatives *éélǵ* ‘in’, *śśl* ‘above’, *ááɲ/ēēɲ* ‘behind’ on polysyllabic vowel-final stems**

Stem-final	N SG	N SG	N SG	N SG	
		‘in’	‘above’	‘behind’	
(a) <i>εε</i>	ābbéé	ābbéé = lg	ābbéé śśl	ābbéé ááɲ	‘uncle’
(b) <i>ii</i>	ūrīī	ūrī.í = ɪlg	ūrīī śśl	ūrīī ááɲ	‘ostrich’
(c) <i>aa</i>	wááyáá	wááyáá = lg	wááyáá śśl	wááyáá ááɲ	‘bird type’
(d) <i>əə</i>	gḁũlḁḁḁ	gḁũlḁḁḁ ēēlg	gḁũlḁḁḁ ɔɔl	gḁũlḁḁḁ āāɲ	‘fish’
(e) <i>ɔɔ</i>	mélɔḁ	mélɔḁ éēlg	mélɔḁ śśl	mélɔḁ ááɲ	‘sugar cane’
(f) <i>uu</i>	əyúú	əyúú éēlg	əyúú śśl	əyúú ááɲ	‘tooth brush’
(g) <i>a</i>	ṭááḁḁ	ṭááḁ = ēēlg	ṭááḁḁ ɔɔl	ṭááḁḁ āāɲ	‘grandmother’
(h) <i>ə</i>	əɲḁ	əɲḁ ēēlg	əɲḁ ɔɔl	əɲḁ āāɲ	‘little girl’
(i) <i>ɔ</i>	ḁnsḁ	ḁns = ēēlg	ḁnsḁ ɔɔl	ḁnsḁ āāɲ	‘cooking plate’
(j) <i>u</i>	kúúfú	kúúf = ɪlg	kúúf = ɪũl	kúúfú ááɲ	‘crushed beans’
(k) <i>uə</i>	būḁ	būḁ ēēlg	būḁ ɔɔl	būḁ āāɲ	‘tree type’

The body part locative *éélǵ* ‘in’ can attach to singular nouns with stem-final consonants evidenced by [ATR] harmony, but the other vowel-initial singular locatives remain separate.

(10) **Singular body part locatives *éélǵ* ‘in’, *óól* ‘above’, *ááǵ/ééǵ* ‘behind’ on singular nouns with stem-final consonants**

	Stem-final	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
(a)	bb	ǵílàbb	ǵílàbb = iǵlǵ	ǵílàbb óól	ǵílàbb ááǵ	‘water spring’
(b)	ǵ	māāǵ	māāǵ = ééǵ	māāǵ óól	māāǵ ááǵ	‘snake type’
(c)	d	dóǵ	dóǵ = ééǵ	dóǵ óól	dóǵ ááǵ	‘bird type’
(d)	ǵ	bimírǵǵ	bimírǵǵ = iǵlǵ	bimírǵǵ óól	bimírǵǵ ááǵ	‘bird type’
(e)	gg	kàmàlògg	kàmàlògg = ēēǵ	kàmàlògg óól	kàmàlògg ááǵ	‘woman’
(f)	s	máróós	máróós = ééǵ	máróós óól	máróós ááǵ	‘spider’
(g)	m	ǵóm	ǵóm = iǵlǵ	ǵóm óól	ǵóm ááǵ	‘Arab’
(h)	n	séèn	séèn = ēēǵ	séèn óól	séèn ááǵ	‘ruler’
(i)	ǵ	ǵéèǵ	ǵéèǵ = ēēǵ	ǵéèǵ óól	ǵéèǵ ááǵ	‘spear type’
(j)	r	púr	púr = iǵlǵ	púr óól	púr ááǵ	‘flower’
(k)	l	ǵòǵòl	ǵòǵòl = ēēǵ	ǵòǵòl óól	ǵòǵòl ááǵ	‘millipede’

Regardless of the stem-final segments, the plural body part locatives *ǵlǵ* ‘in’, *úúǵ* ‘above’, and *óóǵ* ‘behind’ of (6-10) do not undergo changes and are thus analyzed as separate words from the preceding plural nouns. Singular locatives are also presented for comparison.

(11) **Body part locative *ééǵ* ‘in’ and *ǵlǵ* ‘in’ on various segment-final singular and plural nouns**

Suffix	N SG	N PL	N SG ‘in’	N PL ‘in’	
-gg	wáár	wáār-g	wáár ééǵ	wáār-g ǵlǵ	‘insect’
-gg	wááyáá	wááyáá-gg	wááyáá-lǵ	wááyáá-gg ǵlǵ	‘bird’
-gg	kúúfú	kúúfú-gg	kúúfú-ǵlǵ	kúúfú-gg ǵlǵ	‘beans’
-ǰgg	célǵ	célǵ-ǰgg	célǵ ééǵ	célǵ-ǰgg ǵlǵ	‘broom’
-ÉÉgg	púr	púr-ǵgg	púr-ǵlǵ	púr-ǵgg ǵlǵ	‘flower’
-ǰǰgg	ǵl	ǵl-ǰǰgg	ǵl ééǵ	ǵl-ǰǰgg ǵlǵ	‘horn’
-ǰǰǵ	kàmàlògg	kàmàlògg-ǰǰǵ	kàmàlògg ēēǵ	kàmàlògg-ǰǰǵ ǵlǵ	‘woman’
-ǵ	ābbéé	ābbéé-ǵ	ābbéé-lǵ	ābbéé-ǵ ǵlǵ	‘uncle’
-ǵ/-gg	ǵèrmù-ǵ	ǵèrmù-gg	ǵèrmù-ǵ ēēǵ	ǵèrmù-gg ǵlǵ	‘insect’
-Éǵ/-gg	ǵíǵ-ǵ	ǵíǵ-g	ǵíǵ-ǵ-ǵlǵ	ǵíǵ-g ǵlǵ	‘louse’

(12) **Body part locative ʒʒl ‘above’ and úùlg ‘above’
on various segment-final singular and plural nouns**

Suffix	N SG	N PL	N SG ‘above’	N PL ‘above’	
-gg	wáár	wáār-g	wáár ʒʒl	wáār-g úùlg	‘insect’
-gg	wááyáá	wááyáá-gg	wááyáá ʒʒl	wááyáá-gg úùlg	‘bird’
-gg	kúúfú	kúúfú-gg	kúúf = úúl	kúúfú-gg úùlg	‘beans’
-Āgg	célɔ	célɔ-āgg	célɔ ʒʒl	célɔ-āgg úùlg	‘broom’
-ĒĒgg	púr	púr-īgg	púr ʒʒl	púr-īgg úùlg	‘flower’
-ĀAgg	íl	íl-àəgg	íl ʒʒl	íl-àəgg úùlg	‘horn’
-ĀAd	kàmàləgg	kàmàləgg-àəɔ	kàmàləgg ʒʒl	kàmàləgg-àəɔ úùlg	‘woman’
-ɔ	ābbéé	ābbéé-ɔ	ābbéé ʒʒl	ābbéé-ɔ úùlg	‘uncle’
-ɔ/-gg	gèrmù-ɔ	gèrmù-gg	gèrmù-ɔ ʒʒl	gèrmù-gg úùlg	‘insect’
-Ed/-gg	jín-íd	jín-g	jín-íd ʒʒl	jín-g úùlg	‘louse’

(13) **Body part locative ááɲ/ééɲ ‘behind’ and ʒəɲg ‘behind’
on various final segments of singular and plural nouns**

Suffix	N SG	N PL	N SG ‘behind’	N PL ‘behind’	
-gg	wáár	wáār-g	wáár ááɲ	wáār-g ʒəɲg	‘insect’
-gg	wááyáá	wááyáá-gg	wááyáá ááɲ	wááyáá-gg ʒəɲg	‘bird’
-gg	kúúfú	kúúfú-gg	kúúfú ááɲ	kúúfú-gg ʒəɲg	‘beans’
-Āgg	célɔ	célɔ-āgg	célɔ ááɲ	célɔ-āg ʒəɲg	‘broom’
-ĒĒgg	púr	púr-īgg	púr ááɲ	púr-īgg ʒəɲg	‘flower’
-ĀAgg	íl	íl-àəgg	íl āáɲ	íl-àəgg ʒəɲg	‘horn’
-ĀAd	kàmàləgg	kàmàləgg-àəɔ	kàmàləgg āáɲ	kàmàləgg-àəɔ ʒəɲg	‘woman’
-ɔ	ābbéé	ābbéé-ɔ	ābbéé ááɲ	ābbéé-ɔ ʒəɲg	‘uncle’
-ɔ/-gg	gèrmù-ɔ	gèrmù-gg	gèrmù-ɔ āáɲ	gèrmù-gg ʒəɲg	‘insect’
-Ed/-gg	jín-íd	jín-g	jín-íd ááɲ	jín-g ʒəɲg	‘louse’

12.2 Tonal formation of body part locatives

The singular body part locatives *éélg* ‘in’, *ʒʒl* ‘above’, *ááɲ/ééɲ* ‘behind’ have underlying High tone and the plural body part locatives *úùlg* ‘in’, *úùlg* ‘above’, *ʒəɲg* ‘behind’ have underlying HL tone. Regardless of whether the locatives attach to nouns, initial High tone of the locative is lowered to Mid following noun-final Low tone, as shown by (14-19).

(14) **Singular body part locatives *éélg* ‘in’, *ʒʒl* ‘above’, *ááɲ/ééɲ* ‘behind’
on stem-final *ə* nouns with three tone melodies**

Tone	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
H	jááə	jááə = éélg	jááə = ʒʒl	jááə ááɲ	‘old clothes’
M	məəə	məəə = ílg	məəə = úúl	məəə ááɲ	‘grandfather’
L	yààə	yààə = ēélg	yààə = ʒʒl	yààə āáɲ	‘sister’

(15) **Singular body part locatives *éélǵ* ‘in’, *śól* ‘above’, *ááǵ/ééǵ* ‘behind’ on monosyllabic approximant-final stems with various tone melodies**

Tone	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
H	ááé	áá.é = éǵ	áá. = śólǵ	ááy = ááǵ	‘honey’
M	mūī	mū.í = íǵ	mūī. = úúl	mūī ááǵ	‘wildebeest’
L	bààð	bààw = ēēǵ	bàà. = ǝǝl	bààw = āāǵ	‘father’
HL	káð	kāw = ēēǵ	kā. = ǝǝl	kāw = āāǵ	‘hyena’
ML	ɲūūī	ɲūū. = īīǵ	ɲūūī. = ūūl	ɲūūī āāǵ	‘leopard’

(16) **Singular body part locatives *éélǵ* ‘in’, *śól* ‘above’, *ááǵ/ééǵ* ‘behind’ on monosyllabic long vowel-final stems with various tone melodies**

Tone	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
H	cáá	cáá. = ééǵ	cáá. = śól	cáá ááǵ	‘wild cat’
M	mīī	mīī. = ííǵ	mīī. = úúl	mīī ááǵ	‘goat’
L	ɖīī	ɖīī. = īīǵ	ɖīī. = ūūl	ɖīī āāǵ	‘rat’
HL	máà	máà. = ēēǵ	máà. = ǝǝl	máà āāǵ	‘house’
ML	ɟīī	ɟīī. = īīǵ	ɟīī. = ūūl	ɟīī āāǵ	‘turkey’

(17) **Singular body part locatives *éélǵ* ‘in’, *śól* ‘above’, *ááǵ/ééǵ* ‘behind’ on polysyllabic vowel-final nouns with various tone melodies**

Tone	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
H	áðá	áð = ééǵ	áð = śól	áðá ááǵ	‘dog’
M	ūrīī	ūrī.í = íǵ	ūrīī śól	ūrīī ááǵ	‘ostrich’
L	ðnsð	ðns = ēēǵ	ðnsð ǝǝl	ðnsð āāǵ	‘cooking plate’
HL	báɖà	báɖ = ēēǵ	báɖà ǝǝl	báɖà āāǵ	‘gourd cup’
ML	gāfà	gāf = ēēǵ	gāfà ǝǝl	gāfà āāǵ	‘farm, field’
MH	mṣðṣ	mṣð = ééǵ	mṣðṣ śól	mṣðṣ ááǵ	‘locust’

(18) **Singular body part locatives *éélǵ* ‘in’, *śól* ‘above’, *ááǵ/ééǵ* ‘behind’ on consonant-final nouns with various tone melodies**

Tone	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
H	wáár	wáár = ééǵ	wáár śól	wáár ááǵ	‘insect type’
M	ɖṣm	ɖṣm = ííǵ	ɖṣm śól	ɖṣm ááǵ	‘Arab’
L	kààm	kààm = ēēǵ	kààm ǝǝl	kààm āāǵ	‘cow type’
HL	séèn	séèn = ēēǵ	séèn ǝǝl	séèn āāǵ	‘ruler’
HM	ɟórgāāl	ɟórgāāl = ééǵ	ɟórgāāl śól	ɟórgāāl ááǵ	‘bird type’
ML	kṣðèl	kṣðèl = ēēǵ	kṣðèl ǝǝl	kṣðèl āāǵ	‘baboon’
LH	àggáár	àggáár = ééǵ	àggáár śól	àggáár ááǵ	‘hunter, rider’
LM	gðēn	gðēn = ééǵ	gðēn śól	gðēn ááǵ	‘metal worker’
MH	bāár	bāár = ééǵ	bāár śól	bāár ááǵ	‘tribe member’

(19) **Plural body part locatives *îlg* ‘in’, *ûlǵ* ‘above’, *ǝǵng* ‘behind’
on nouns with various tone melodies**

Tone	N PL	N PL ‘in’	N PL ‘above’	N PL ‘behind’	
H	wáār-g	wáār-g îlg	wáār-g ûlǵ	wáār-g ǝǵng	‘insect type’
M	ḍǝm-g	ḍǝm-g îlg	ḍǝm-g ûlǵ	ḍǝm-g ǝǵng	‘Arab’
L	kààm-g	kààm-g îlg	kààm-g ûlǵ	kààm-g ǝǵng	‘cow type’
HL	séèn-g	séèn-g îlg	séèn-g ûlǵ	séèn-g ǝǵng	‘ruler’
HM	jǝrgāāl-g	jǝrgāāl-g îlg	jǝrgāāl-g ûlǵ	jǝrgāāl-g ǝǵng	‘bird type’
ML	kǝḍǝl-g	kǝḍǝl-g îlg	kǝḍǝl-g ûlǵ	kǝḍǝl-g ǝǵng	‘baboon’
LH	ǝggáār-g	ǝggáār-g îlg	ǝggáār-g ûlǵ	ǝggáār-g ǝǵng	‘hunter, rider’
LM	gḍēn-g	gḍēn-g îlg	gḍēn-g ûlǵ	gḍēn-g ǝǵng	‘metal worker’
MH	bāār-g	bāār-g îlg	bāār-g ûlǵ	bāār-g ǝǵng	‘tribe member’

The singular body part locatives *bāl* ‘under’ and *mūū* ‘in front of’ have underlying Mid tone which assimilates to final Low tone of a preceding noun. The locative *bēŋŋ* ‘beside’ has underlying Low tone which is not affected by any tone.

(20) **Singular body part locatives *bāl* ‘under’, *mūū* ‘in front of’, *bēŋŋ* ‘beside’
on consonant-final nouns with various tone melodies**

Tone	N SG	N SG ‘under’	N SG ‘in front of’	N SG ‘beside’	
H	wáár	wáár bāl	wáár mūū	wáár bēŋŋ	‘insect type’
M	ḍǝm	ḍǝm bāl	ḍǝm mūū	ḍǝm bēŋŋ	‘Arab’
L	kààm	kààm bāl	kààm mùù	kààm bēŋŋ	‘cow type’
HL	séèn	séèn bāl	séèn mùù	séèn bēŋŋ	‘ruler’
HM	jǝrgāāl	jǝrgāāl bāl	jǝrgāāl mūū	jǝrgāāl bēŋŋ	‘bird type’
ML	kǝḍǝl	kǝḍǝl bāl	kǝḍǝl mùù	kǝḍǝl bēŋŋ	‘baboon’
LH	ǝggáár	ǝggáár bāl	ǝggáár mūū	ǝggáár bēŋŋ	‘hunter, rider’
LM	gḍēn	gḍēn bāl	gḍēn mūū	gḍēn bēŋŋ	‘metal worker’
MH	bāár	bāár bāl	bāár mūū	bāár bēŋŋ	‘tribe member’

The plural body part locatives *bàlg* ‘under’, *mùùgg* ‘in front of’, *bēŋāāgg* ‘beside’ also have initial Low tone which is not affected by any tone.

(21) **Plural body part locatives *bàlg* ‘under’, *mùùgg* ‘in front of’, *bēŋāāgg* ‘beside’
on nouns with various tone melodies**

Tone	N PL	N PL ‘under’	N PL ‘in front of’	N PL ‘beside’	
H	wáār-g	wáār-g bàlg	wáār-g mùùgg	wáār-g bēŋāāgg	‘insect’
M	ḍǝm-g	ḍǝm-g bàlg	ḍǝm-g mùùgg	ḍǝm-g bēŋāāgg	‘Arab’
L	kààm-g	kààm-g bàlg	kààm-g mùùgg	kààm-g bēŋāāgg	‘cow’
HL	séèn-g	séèn-g bàlg	séèn-g mùùgg	séèn-g bēŋāāgg	‘ruler’
HM	jǝrgāāl-g	jǝrgāāl-g bàlg	jǝrgāāl-g mùùgg	jǝrgāāl-g bēŋāāgg	‘bird’

Tone	N PL	N PL 'under'	N PL 'in front of'	N PL 'beside'	
ML	kṣḍèl-g	kṣḍèl-g bəl̩g	kṣḍèl-g mùùgg	kṣḍèl-g beɲāāgg	'baboon'
LH	àggáār-g	àggáār-g bəl̩g	àggáār-g mùùgg	àggáār-g beɲāāgg	'hunter'
LM	gḍēn-g	gḍēn-g bəl̩g	gḍēn-g mùùgg	gḍēn-g beɲāāgg	'metal worker'
MH	bāár-g	bāár-g bəl̩g	bāár-g mùùgg	bāár-g beɲāāgg	'tribe m.'

13 Adverbs

Another lexical category—adverbs, describes the action of the clause, the clause predicate or the entire clause. There is a strong case for both adjectives and adverbs; different modifiers are normally used to describe verbs than those used to describe nouns. The adjective *wēḡán* ‘good.SG’ of (1a) cannot be used in (b) to describe the verb *ḥīḡ-ḡḡ* ‘hear’, and the adverb *māḡ* ‘well’ of (b) cannot be used to describe the noun *sālāām* ‘peace’ in (a). Furthermore, the adjective *wēḡán* agrees in number with the noun it modifies, whereas the adverb *māḡ* is unchangeable, and therefore not a noun or any other word category with number distinction.

- (1a) *sālāām* *é* *ṭél* ***wēḡán***
 peace GP God good.SG
 ‘The peace of God is good.’
- (b) *bù* *ḥīḡ-ḡḡ* *kōr = é* ***māḡ***
 let.IMP hear-SBJV.3pN word=RDM well
 ‘Let them hear this message well!’ (Womn25)

In this chapter, all attested words are presented which have the function of describing the action of the clause, the clause predicate or the entire clause. These words which are lexically categorized as adverbs can be grouped semantically according to manner, direction, place, time, or none of these. Adverbs of manner, direction, and place always follow the verb, whereas other adverbs are moveable outside of the verb phrase and may occur before the verb. When more than one kind of adverb is present, it is most common for manner and directional adverbs to precede adverbs of place, time, and other adverbs. The negative particle can also be analysed as an adverb since it has the same function as adverbs and always occurs clause-finally.

13.1 Adverbs of manner

Adverbs of manner, which describe how the action takes place, immediately follow the verb or any verb complements.

- (2a) *ā* *bā* *kāḡ* *wāḡ-já* ***bír***
 SBJV /bag/collect.SBJV multitude /waḡ/go-SBJV openly
 ‘. . . to gather the multitude (of people) scattered about.’
- (b) *ḡ* *ḡēn = á* . . . *bō = ì* ***ḡùùl***
 and person = DEF send = 3sAM difficult
 ‘The person . . . to send is difficult (to find).’ (Assa9-10)

A few attested adverbs of manner are given in (3).

(3) **Adverbs of manner**

bír	‘openly’	sù	‘deeply’
rēggāāḍ	‘loudly’	ṭifīṭṭ	‘quickly’
māṇ	‘well’	ǰáám	‘wrongly’
ḍùùl	‘difficult’		

13.2 Adverbs of direction

Adverbs of direction, indicating the direction of the action, may describe the verb without any further verb modifiers as in (4a). However, it is common for adverbs of direction to occur along with adverbs of place, which normally follow adverbs of direction as in (b).

- (4a) ēgg bōfō ēgg léē **ṭàḍ**
 3pN sing 3pN going up
 ‘They sang as they went up.’ (Fand25)
- (b) á wīr-ōn áfáḍ mān **ṭáḍ** ṭè
 1sN slaughter-CONT blood certain down here
 ‘I am making a sacrifice here (lit. slaughtering down a certain living creature here).’ (Jooj9)

A list of some adverbs of direction is provided in (5).

(5) **Adverbs of direction**

ṭáḍ	‘down’	ṭàḍ	‘up’
sím	‘in, down’	ṭú	‘out, away, through’
cābb	‘up’	fān	‘on, to’
ḍūmùùn	‘towards’		

13.3 Adverbs of place

Adverbs of place can reference physical or figurative locations of verbs. They can describe the verb by themselves or along with another adverb. Other adverbs, such

- (6a) mósí nēé nōr-r-ōn **ṭè**
 insect this drools-CAUS-CONT.N here
 ‘This insect drools here.’ (Jooj10)
- (b) ò á ǰām ā ṭāl kōr é mūn **ṭè** ǰō
 and 1sN want SBJV create speech GP time here only
 ‘And now I will stop talking here.’ (Tifa14)

- (c) gùrūūs-úgg = ú t̥ā t̥ù wá
 money-PL = DEF COP there not
 ‘There is no money.’ (Fand16)

as ʃɔ̃ ‘only’ in (6b), follow adverbs of place.

Attested adverbs of place are listed in (7). The same three-way distinction as in demonstratives in 8.1.3—near a speaker, near an addressee, and away from both speaker and addressee—also occur in adverbs, as well as a presentational adverb as in (6c).

(7) **Adverbs of place**

Long	Short		
t̥èèðé	t̥è	‘here’	near speaker
t̥ààðá	t̥à	‘there’	near addressee
t̥iìðí	t̥ì	‘there’	away from both
	t̥ù	‘there’	presentational

13.4 Adverbs of time

Adverbs of time normally occur as part of the verb phrase as in (8a, b), but may precede the clause entirely as in (c).

- (8a) ð ú = ɲɔ̃m ɲíí **bārè** ā
 and 2sN = want what now QM
 ‘And what do you want now?’ (Jooj7)
- (b) āgg wāj-jā wāā = lg **fěédɔ̃l** ʃɔ̃
 1pN went-COMP water = in early.morning only
 ‘We also went to the water valley early in the morning.’ (Thng17)
- (c) ð **bārè** ú = b̥ur ú-ən = ī bà
 and now 2sN = remain.INCP 2sN = an/live.INCP = IPF oh
 ‘And are you still living (with good health)?’

Attested adverbs of time are listed in (9).

(9) **Adverbs of time**

bārè	‘now’
kāēn	‘yesterday’
fěédɔ̃l	‘early morning’

Prepositional phrases introduced with the general preposition *é, í* (GP) of 11.3 can be used as adjuncts indicating time. In (10a), the phrase *é nāāndá mán* ‘on a certain day’ describes the time of the verb *wāḥḥā* ‘went’. Such phrases are also common at the beginning of the clause as in (b).

- (10a) á wāḥḥā é nāānd=á mán ḍūmùùn é ḍààl.
 1sN went GP day=DEF certain towards GP (valley name)
 ‘One day I went to Dal Valley.’ (Thng1)

- (b) é nāānd=á yāàn, āḍ=á ē áḍággā ē fāàm
 GP day=DEF other Fox=DEF 3sN came 3sN thought
 ‘Another day, Fox brought another idea . . .’ (Nyee30)

Attested prepositional phrases used as adjuncts indicating time are shown in (11).

(11) **Prepositional phrases used as adjuncts indicating time**

é fōgg	‘tomorrow’
é yāāgg	‘a while’
é kááy-ēēgg	‘at night’
é nāāndá yāàn	‘another day’
é gārándá	‘at that time’

13.5 Other adverbs

Other adverbs are found to modify verbs, verb predicates, or the entire clause. Although they most commonly occur following the verb, some precede the verb when emphasizing noun subjects or even introduce the clause. The adverbs in (12a, b) show the most typical position, following the verb. In (c), the adverb *jṣ* ‘just’,

- (12a) mōrāā óḍ=í **ṭāān**
 government came=IPF again
 ‘The government came again.’ (Fand10)

- (b) ô, wéé dàr **jṣ** ā gāḍ-dā īggó jnālg=ān
 oh go hide only SBJV give-SBJV.1pN milk.DEF children=DAT
 ‘Let’s just go hide in order to give this milk to the children.’ (Nyee26)

- (c) jāfārì=n é mánē **jṣ** ḍàḍ-sā càḍr-ēēgg=á yōḍṣó.
 Jafari=DEF alone just killed-COMP rabbits-PL=DEF four
 ‘Jafari, by himself, killed four rabbits.’ (Jafr7)

- (d) bēl-án gùrjēēn **jṣ**.
 having-CONT.P two.piasters(Ar) only
 ‘He had only two piasters.’ (Fand1-2)

emphasizes the subject, whereas in (d), the adverb emphasizes the object.

The remaining attested adverbs are listed in (13).

(13) **Other adverbs**

dí	‘also, in addition to’	páḍ	‘suddenly, always, forever’
jō	‘only, no more, just’	rē	‘very’
ḍēēnē	‘only’	ānà	‘like this’
ṭāān	‘again, another time’	ánēén	‘like this’
mārèè	‘somehow’	gḍl	‘just, in that way’
mā	‘even’		

13.6 Negation

The negative particle *wá* always occurs clause-finally and modifies or negates the preceding verb, verb predicate or clause. Since neither its position nor function differs from adverbs, the negative particle can also be analyzed as an adverb. As in (14a), the negative particle occurs as the last word of the verb phrase and may be separated from the verb by verb complements or adjuncts. The negative particle may also negate an adverb of manner as in (b) or a prepositional phrase functioning as an adverb as in (c).

(14) **Negative examples**

- (a) mōīḍ kūūḍ = ū ḍàḍ-sā jèēm ḍéé **wá**
 old.man person.name = DEF kill-COMP thing any not
 ‘The old man Kuud didn’t kill anything.’ (Jafr8)
- (b) mássēē jìs-ḍn = ḍ mânj **wá**
 sickness treating-CONT.N = 1sD carefully not
 ‘The massee sickness is not treating me well.’ (Assa2)
- (c) jèēm âr-s āān ánēén é nāāḍ-á mǎn **wá**
 something frightened-COMP 1sA like.this GP day-DEF certain not
 ‘There has never been a day I was as frightened as this.’ (Thng14)

14 Clause-level syntax

14.1 Introduction

In the previous chapters, various morphemes have been shown to be distinct in form. We now present many of the same morphemes in their syntactic context to show their function. Agentive passive, agentless passive, antipassive, and causative verb forms are shown to be syntactically distinct. In non-verbal clauses, copular clitics are shown to take the place of separate copula particles, which are functionally equivalent but different in form. Relative clauses are morphologically marked for definiteness and grammatical function, and they receive the marking instead of the head noun they modify.

In this chapter, we first discuss grammatical function of constituents in 14.2 and word order in 14.3, then verbal clauses in 14.4 and verbal valency in 14.5, followed by non-verbal clauses in 14.6, relative clauses in 14.7, evidentiality in 14.8, and finally noun phrases in 14.9.

14.2 Grammatical function of constituents

Nouns function as subjects, objects, indirect objects, or objects of prepositional phrases. In (1), *mèēn* ‘youth’ has the role of agent and functions as the subject of the clause. The noun *nāmsá* ‘food’ has the role of a theme, functioning as an object, whereas *māōōn* ‘grandfather’ is the recipient and indirect object.

- (1) *mèēn* *māār-sá* *nāms-á* *māōō = ān*
 youth.leader /mar/buy-COMP food-DEF grandfather=DAT
 ‘The youth leader bought the food for the grandfather.’

Case marking does not occur on subject or object nouns, but dative nouns take the clitic =*ān* as shown in (1) and (2) and have the role of beneficiary or recipient. In (2), the noun *kááy-ēēgg = é* ‘night-PL=RDM’ functions as the object of the general preposition *é* (GP).

- (2) *ò* *ná* *bér-s = āná* *nālg = ān* *é* *kááy-ēēgg = é*
 and REL explain-COMP=PAS small.ones=DAT GP night-PL=RDM
 ‘... and that which is explained (fable) to children at night.’

Objects and indirect objects are verb complements, whereas prepositional phrases, locative phrases and adverbs are verb adjuncts. In (2), the prepositional phrase *é kááy-ēēgg = é* ‘at night’ is an adjunct to the verb *bérsāná* ‘explain’ expressing time. In (3), the locative phrase *ūfú ʒʒl* ‘in the tree’ and adverb *qēēnē* ‘only’ are both adjuncts to the verb *ān* ‘stay’ expressing location.

- (3) ē àn ūfú ʒól dēēnē.
 3sN staying tree up only
 ‘... as he remained in the tree.’ (Nye35)

14.3 Word order

Gaahmg word order is SVO, as in (4).

- (4) bāārg-á ḡáʒ-ǎ n pā-lg nà ʒn-g = ì
 Baggara-DEF search-CONT.P girl-PL REL.PL young-PL = RDM
 ‘The Baggara (people group) were kidnapping young girls.’ (Minj2)

As shown in (5), verb complements—objects and indirect objects—immediately follow the verb, and adjuncts follow verb complements. Adverbs are least connected with the verb and the most moveable of the adjuncts, sometimes being fronted before the verb, although not usually before the subject. When more than one kind of adverb is present, manner and directional adverbs normally precede adverbs of place, time, and other adverbs. Negation markers can be analyzed as adverbs, since they follow the verb and its adjuncts and have the same function as adverbs. They are always sentence-final and cannot be fronted before the verb as some adverbs can.

- (5) Word order of complements and adjuncts
 (ADV_[Adjunct]) V (NP_[O]) (NP_[IO]) ({LP, PP, ADV}_[Adjunct])

The examples of (6) show the common word order of verb complements and adjuncts. In (a), the object *kōr* ‘speech’ is followed by a prepositional phrase *é mūn* ‘by time’, which is followed by an adverb of place *tè* ‘here’, and then followed by the adverb *ʒō* ‘only’. In (b), the verb is followed by the locative phrase *mōsōr ʒōl* ‘on a horse’, by the prepositional phrase *ē páré = n é mǎḡil = ʒ* ‘with animal skin of the devil’ which is a prepositional phrase within a phrase, and finally by the prefixed prepositional phrase *ḡ-éēs* ‘in his hand’.

- (6a) ā tāl kōr é mūn tè ʒō.
 SBJV create.SBJV.1sN speech by time here only
 ‘... and I will stop talking here.’ (Tifa14)
- (b) ē àn mōsōr ʒōl ē páré = n é mǎḡil = ʒ ḡ-éēs.
 3sN stay horse up with skin.bag = GP devil.GEN = PP-
 DEF DEF hand.3sPs
 ‘He rides on a horse with an animal-skin bag of the devil in his hand.’
 (Minj14-15)

14.4 Verbal clauses

Verbal clauses with underived verbs can be transitive, intransitive or dative (three-argument). The intransitive clauses of (7) have the subjects as their only argument. Intransitive verbs are not uncommon in Gaahmg.

(7) Intransitive (1 argument)

- (a) $\bar{a}l\bar{d} = \acute{a}$ \bar{e} $w\bar{a}j\text{-}j$ $t\acute{u}$.
fox = DEF 3sN /w $\bar{a}j$ /go-INF out
‘The fox went out.’ (Goat16-17)

- (b) $m\bar{o}r\bar{a}\bar{a}$ $\acute{o}\bar{o}\text{-}\acute{o}\text{-}\acute{i}$ $t\bar{a}\bar{a}n$
government / $\acute{a}\bar{o}$ /come.INF-IPF again
‘The government came again.’ (Fand10)

Transitive verbs have the arguments subject and object which in the clause of (8) have the semantic roles of agent and theme. In Gaahmg, there is no morphological distinction between transitive and intransitive verbs.

(8) Transitive (2 arguments)

- | | | | | | |
|--------------------------------------|-------------------------------|-------------|-------------------------|-----------|----------------------|
| AGENT | | THEME | | | |
| $j\bar{a}d\bar{e}\bar{e}r = \bar{a}$ | $w\bar{a}r\text{-}s\acute{a}$ | $k\bar{a}j$ | $\acute{i}n\bar{i} = n$ | \bar{e} | $m\bar{a}d\bar{a}$. |
| Jader = DEF | /w $\bar{a}r$ /carry-COMP | group | 3sPs = DEF | with | big.size |
- ‘Jader led his very large group.’ (Fand24-25)

Dative verbs have the arguments subject, object, and indirect object which in the clause of (9) have the semantic roles of agent, theme, and recipient. The presence of a recipient or beneficiary in a clause requires the presence of an agent or experiencer and patient or theme. In other words, a dative cannot be present without a subject and object. The dative verbs attested are / $g\bar{a}f$ / ‘give’, / $b\bar{e}\bar{e}$ / ‘tell, say’, / $b\bar{a}g$ / ‘bring’.

(9) Dative (3 arguments)

- | | | | |
|-------------|-----------------------------------|-----------------------|---|
| AGENT | | THEME | RECIPIENT |
| $j\bar{e}n$ | $g\bar{a}\bar{o}\text{-}s\bar{a}$ | $m\bar{i}\bar{i} = n$ | $k\bar{a}m\bar{a}l\bar{o}gg = \bar{a}n$ |
| person | give-COMP | goat=DEF | woman=DAT |
- ‘The person gave the woman the goat.’

14.5 Verbal valency

Although there is no morphological distinction between transitive and intransitive verbs, there are four valency-decreasing morphemes and one valency-increasing morpheme attached to verbs. The functions of each are shown by the examples in following sections.

Table 56: Verb derivational markers

	SG	PL	
Agented passive	= \tilde{E}	= $\tilde{E}\tilde{E}$	valency- decreasing
Middle	[+ATR], tone change	[+ATR], tone change	
Passive	= $\tilde{A}n\tilde{A}$, = \tilde{A}	= $\tilde{A}n\tilde{A}$, = \tilde{A}	
Antipassive	-An	-An	
Causative	[+ATR], - \check{d}^+A	[+ATR], - \check{d}^+A	valency- increasing

14.5.1 Agented passive

The agented passive clitic decreases the valency of the clause by demoting the agent to non-argument status, although an explicit expression of the agent is still required. In clauses with agents encoded by post-verbal constructions, an agented passive clitic = \tilde{E} / = $\tilde{E}\tilde{E}$, which agrees with a genitive agent in number, is attached to the verb stem. The clauses of (10-11) have singular and plural agents in pre- and post-verbal positions.

(10) Pre-verbal agents

- | | | | | | | | |
|-----|--------------------------------|--------|------------|-----|--------------------------------|--------|------------|
| | AGENT | | PATIENT | | AGENT | | PATIENT |
| (a) | jēn | nām-sá | gùlḍūn | (b) | jōgg | nām-sà | gùlḍūn |
| | person | break- | branch.DEF | | people | break- | branch.DEF |
| | | COMP | | | | COMP | |
| | ‘The person broke the branch.’ | | | | ‘The people broke the branch.’ | | |

(11) Post-verbal agent, agented passive verb

- | | | | | | | | |
|-----|--|-----------------------------------|---------|-----|--|------------------------------|------------|
| | PATIENT | | AGENT | | PATIENT | | AGENT |
| (a) | gùlḍūn | nām-s = \tilde{E} ³⁸ | jēn | (b) | gùlḍūn | nām-s = $\tilde{E}\tilde{E}$ | jōgg |
| | branch | break- | person. | | branch | break- | people.GEN |
| | | COMP=PAS.A | GEN | | | COMP=PAS.A | |
| | ‘The branch was broken by the person.’ | | | | ‘The branch was broken by the people.’ | | |

Third person encodings of agents or experiencers follow the verb when objects are in focus, being pre-verbal. In such clauses, nouns with the role of agent or experiencer can be introduced with the general preposition \tilde{E} (GP) as in (12a). Pronouns with such roles can be introduced with the prefix \check{d} - ‘by’ as in (b). A noun with these roles following a verb without a preposition is in genitive case, marked by a tone change, as in (c). The noun *àggáár* ‘hunter’ of (c) has LH root tone melody which switches to ML tone melody in genitive case.

³⁸ As discussed in 10.2.2, root tone of Mid root tone melodies becomes MH in incompleted and completive verbs with agented passive clitic.

(12) **Clauses with agented passives**

- (a) gààr cúó . . . nām-án = ḗ káé-gg = à
 pork sweet /nam/eat-CONT.P=PAS.A GP witchdoctor-PL=DEF
 ‘Sweet pork . . . was being eaten by witchdoctors.’
- (b) jāām kóðm-s = ī́ d-één wá.
 someone /káàm/bothered.CAUS-COMP = PAS.A PP-3sO not
 ‘No one was bothered by it.’ (Thng25)
- (c) nāms náo-s = ḗ āggāār
 food /naw/need-COMP=PAS.A hunter.GEN
 ‘Food is needed by the hunter.’

14.5.2 Middle

The verb of (13) has a middle form where the speaker indicates that it is unknown whether there is an implied agent or not. The middle form is distinguished from the active form by the vowel specified as [+ATR] and by a tone change, which is the same tone change as in clauses with post-verbal agents such as (11). Because of lack of data collected, it cannot be determined if first or second person subjects are possible with middle verbs.

(13) **Middle (with or without an implied agent)**

- (a) gùlḍūn nām-só (b) gùlḍūgg nām-sò
 branch.DEF break.MID-COMP branch.PL break.MID-COMP
 ‘The branch broke.’ ‘The branches broke.’

14.5.3 Passive

In agentless passive verbs, the speaker indicates an implied, unstated agent which could be known or unknown. The clitic = *ānā* attaches to stems with vowel-final suffixes and the clitic = *á* attaches to stems with consonant-final suffixes or suffixless stems. Passive clitics do not agree in number with the syntactic subject (semantic patient), and do not attach the agented passive clitic.

(14) **Passive (implied agent)**

- (a) gùlḍūn nām-s = ānā (b) gùlḍūgg nām-s = ānā
 branch break-COMP=PAS branch.PL break-COMP=PAS
 ‘The branch was broken.’ ‘The branches were broken.’

In passive clauses, a noun with the role of theme or patient normally takes the place of the syntactic subject, occurring before the passive verb, as in (15a). However, when there is focus on the passive verb, the noun follows the verb, as in (b).

(15) **Passive clauses**

- (a) kólóḍ-ḍ ḍūr-s = **ḍnó**
 egg-DEF /ḍūr/bury-COMP=PAS
 'The egg was buried.' (Fand21)
- (b) fěḍ-án = **á** jègg = **ā** tád
 /fě/put-CONT.P-PAS things=DEF down
 'Things were being laid down.' (Fand27-28)

14.5.4 Antipassive

In antipassive clauses, the speaker indicates an implied, unknown object (patient, theme, or experiencer). Such verb forms are marked by the antipassive suffix *-An* which attaches to the verb root before inflectional suffixes are added. As in active clauses, agents can also be post-verbal in antipassive clauses. In such clauses, verbs are marked with the agented passive clitic =*Ē* / =*ĒĒ* as shown in (17).

(16) **Antipassive (unknown patient)**

- (a) jēn nām-**án**-sá (b) jōgg nām-**án**-sà
 person break-ANTIP-COMP people break-ANTIP-COMP
 'The person broke something.' 'The people broke something.'

(17) **Antipassive, agented passive verb (unknown patient)**

- (a) nām-**án**-s = **ē** jēn (b) nām-**án**-s = **ēē** jōgg
 break-ANTIP- person. break-ANTIP- people.
 COMP=PAS.A GEN COMP=PAS.A GEN
 'Something was broken by the person.' 'Something was broken by the people.'

Further, passive antipassive clauses are used to indicate an implied agent and unknown patient, being marked by the antipassive suffix *-An* and passive clitic =*ĀnÁ*.

(18) **Passive antipassive (implied agent, unknown patient)**

- nām-**án**-s = **āná**
 break-ANTIP-COMP=PAS
 'Something was broken.'

14.5.5 Causative

Causative clauses are used to indicate the reason or initiative of the action being a different argument than that which does the action. Causative verbs then add a second argument to intransitive clauses and a third argument to transitive clauses. They are marked by the vowel specified as [+ATR] and by the causative suffixes

$-s^*A$, $-d^*A$.

In (19), the reason or initiative for breaking is from *àggáár* ‘hunter’, but the actual breaking is done by *jēn* ‘person’. As shown in (20), causative clauses can also have post-verbal agents, being marked by the agented passive clitic $=\tilde{E}$.

(19) **Causative (3 arguments)**

AGENT		EXPERIENCER	PATIENT
<i>àggáár</i>	<i>nóm-só</i>	<i>jēn</i>	<i>gùldū = n</i>
hunter	break.CAUS-COMP	person	branch=DEF

‘A hunter made the person break the branch.’

(20) **Causative, agented passive verb (3 arguments)**

<i>gùldū = n</i>	<i>nóm-s-ī</i>	<i>àggāār(-è)</i>	<i>jēn</i>
branch=DEF	break.CAUS-COMP-PAS.A	hunter.GEN	person

‘A branch was broken by a hunter making the person break it.’

When dative clauses become causative, a fourth argument is added as shown in (21).

(21) **Causative dative (4 arguments)**

AGENT		EXPERIENCER	THEME	RECIPIENT
<i>àggáár</i>	<i>gòu-sō</i>	<i>jēn</i>	<i>mīi</i>	<i>kàmàlōgg = ān</i>
hunter	give.CAUS-COMP	person	goat	woman=DAT

‘A hunter made the person give a goat to the woman.’

Antipassive causative clauses indicate that one or more of the non-agent arguments are unknown. The same verb form is used regardless of which of the non-agent arguments or how many of them are unknown. Antipassive causative clauses with post-verbal agents also have the same form regardless of which non-agent argument or how many are unknown. In (22-23) the patient is unknown, in (24-25) the experiencer is unknown, and in (26-27) the patient and experiencer are unknown.

(22) **Antipassive causative (unknown patient)**

<i>àggáár</i>	<i>nóm-ān-só</i>	<i>jēn</i>
hunter	break.CAUS-ANTIP-COMP	person

‘A hunter made the person break something.’

(23) **Antipassive causative, agented passive verb (unknown patient)**

<i>jēn</i>	<i>nóm-ān-s = ī</i>	<i>àggāār(-è)</i>
person	break.CAUS-ANTIP-COMP=PAS.A	hunter.GEN

‘The person was made to break something by a hunter.’

- (24) **Antipassive causative (unknown experiencer)**
 àggáár nóm-ǎn-só gùldūn
 hunter break.CAUS-ANTIP-COMP branch.DEF
 ‘A hunter made someone break the branch.’
- (25) **Antipassive causative, agented passive verb (unknown experiencer)**
 gùldūn nóm-ǎn-s=ǐ āggāār(-è)
 branch.DEF break.CAUS-ANTIP-COMP=PAS.A hunter.GEN
 ‘The branch was broken by a hunter making someone break it.’
- (26) **Antipassive causative (unknown patient & experiencer)**
 àggáár nóm-ǎn-só
 hunter break.CAUS-ANTIP-COMP
 ‘A hunter made someone break something.’
- (27) **Antipassive causative, agented passive verb (unknown patient & experiencer)**
 nóm-ǎn-s=ǐ āggāār(-è)
 break.CAUS-ANTIP-COMP=PAS.A hunter.GEN
 ‘Something was broken by a hunter making someone break it.’

Passive causative clauses are used to indicate an implied, unstated agent of a causative verb. The patient such as *gùldūn* ‘branch’ in (28) is the syntactic subject. The noun *jēn* ‘person’ is an experiencer which does the action at the initiative of an unstated agent such as *àggáár* ‘hunter’.

- (28) **Passive causative (implied agent)**
 gùldūn nóm-s=ǎnǎ jēn
 branch.DEF break.CAUS-COMP-PAS person
 ‘The person was made to break the branch.’

Finally, passive causative antipassive clauses indicate an implied agent and one or

- (29) **Passive causative antipassive (implied agent, unknown patient)**
 jēn nóm-ǎn-s=ǎnǎ
 person break.CAUS-ANTIP-COMP=PAS
 ‘The person was made to break something.’
- (30) **Passive causative antipassive (implied agent, unknown experiencer & patient)**
 nóm-ǎn-s=ǎnǎ
 break.CAUS-ANTIP-COMP=PAS
 ‘Someone was made to break something.’

more unknown non-agent arguments.

14.6 Non-verbal clauses

There are two sets of copulas with which all non-verbal clauses are formed. The most common set of copulas are shown in table 57 and are used for adjectival, possessive, and equative clauses. A second set is used for locative and presentational clauses, which will be presented shortly. With the limited data collected, it could not be determined how existential clauses, if possible, are constructed.

Table 57: Common copulas

	Non-past SG	Non-past PL	Past continuous
Copula	tā	tā	tā-án
Copular clitic on consonant-final noun phrases	---	= Ā	
Copular clitic on vowel-final noun phrases	= n		

In non-verbal clauses, the copula *tā* can be used as in (31a) or the past continuous copula *tā-án* can be used. However, it is also common for a copular clitic =Ā to attach to the final word of a clause as in (c). Although the independent past continuous copula *tā-án* can be used for past reference, the copular clitic cannot.

(31) Non-verbal clauses

- (a) gùrūūs-úgg-ú **tā** tù wá
 money-PL-DEF COP there not
 ‘There is no money.’ (Fand16)
- (b) Bēēl mán **tā-án** tù
 metal certain COP-CONT.P there
 ‘There was a certain metal token’ (Fand8)
- (c) tś-gg-ś dāmś-gg=**ś**
 cow-PL-DEF blind-PL=COP
 ‘The cows are blind.’

In answer to the question *jīn néé* ‘What is this?’ or *jíggi néé* ‘What are these?’, the copular clitic attached to a single noun is a clause in itself.

- (32a) tśś=**n** (b) tś-gg=**ś**
 cow=COP cow-PL=COP
 ‘(This) is a cow.’ ‘(these) are cows.’

As will be seen, there is no difference in the clausal construction between adjectival clauses and nominal non-verbal clauses. However, as mentioned in 8.3.1, there is a morphological difference in the copular clitic attached to consonant-final nouns (= *Ā*) and the copular clitic attached to consonant-final adjectives (no marking).

14.6.1 Adjectival clauses

In (33), singular and plural adjectival clauses are shown—with the copula *tā* in (a-b) and with the copular clitic in (c-d). There is no copular clitic marking on singular consonant-final adjectives as in (c). The clitic on vowel-final singular adjectives is =*n* as in (e). The clitic =*Ā* on plural adjectives takes the [ATR] quality of the adjective word.

(33) Adjectival clauses

- | | |
|---|--|
| (a) <i>t̪s̪s̪ t̪ā s̪ɛggār</i>
cow COP strong
'A cow is strong.' | (b) <i>t̪s̪-gg t̪ā s̪ɛggār-g</i>
cow-PL COP strong-PL
'Cows are strong.' |
| (c) <i>t̪s̪s̪ s̪ɛggār</i>
cow strong
'A cow is strong.' | (d) <i>t̪s̪-gg s̪ɛggār-g = ā</i>
cow-PL strong-PL = COP
'Cows are strong.' |
| (e) <i>t̪s̪s̪ ɖəm̩ = n</i>
cow blind = COP
'A cow is blind.' | (f) <i>t̪s̪-gg ɖəm̩-gg = ā</i>
cow-PL blind-PL = COP
'Cows are blind.' |

In the adjectival clauses of (34), the initial noun phrases are marked for definiteness.

(34) Definite adjectival clauses

- | | |
|--|--|
| (a) <i>t̪s̪s̪ = n s̪ɛggār</i>
cow = DEF strong
'The cow is strong.' | (b) <i>t̪s̪-gg-ŋ s̪ɛggār-g = ā</i>
cow-PL-DEF strong-PL = COP
'The cows are strong.' |
| (c) <i>c̪ɔ̪l s̪ɛggār = á ɖəm̩ = n</i>
donkey strong = blind =
DEF COP
'The strong donkey is blind.' | (d) <i>c̪ɔ̪l-ēēgg s̪ɛggār-g = ā ɖəm̩-gg = ā</i>
donkey- strong- blind-
PL PL = DEF PL = COP
'The strong donkeys are blind.' |

Demonstratives are not used pronominally. Instead, the indefinite adjective *mān*/*būgg* 'certain' can be used as in (35a-b). Otherwise, demonstratives can be used as in (c-f).

(35) **Demonstratives in copular clauses**

- | | |
|--|--|
| <p>(a) ṭṣṣ mǎn ḍǎmǎ = n
 cow certain blind = COP
 ‘A certain cow is blind.’
 ‘This is a blind cow.’</p> | <p>(b) ṭṣ-gg bīgg ḍǎmǎ-gg = ǎ
 cow-PL certain.PL blind-PL = COP
 ‘Certain cows are blind.’
 ‘These are blind cows.’</p> |
| <p>(c) ṭṣṣ níí ḍǎmǎ = n
 cow this blind = COP
 ‘This cow is blind.’
 ‘This is a blind cow.’</p> | <p>(d) ṭṣ-gg nīi ḍǎmǎ-gg = ǎ
 cow-PL these blind-PL = COP
 ‘These cows are blind.’
 ‘These are blind cows.’</p> |
| <p>(e) ṭṣṣ níí ǎn = ǎ
 cow this 1sPs = COP
 ‘This cow is mine.’
 ‘This is my cow.’</p> | <p>(f) ṭṣ-gg nīi ǎnəgg = ǎ
 cow-PL these 1sPp = COP
 ‘These cows are mine.’
 ‘These are my cows.’</p> |

14.6.2 Possessive clauses

Clause-initial noun phrases of possessive copular clauses can be unmarked for definiteness as in (36a-b) or marked for definiteness as in (c-f).

(36) **Possessive copular clauses**

- | | |
|---|--|
| <p>(a) ṭṣṣ ǎn = ǎ
 cow 1sPs = COP
 ‘a cow is mine.’</p> | <p>(b) ṭṣ-gg ǎnəgg = ǎ
 cow-PL 1sPp = COP
 ‘cows are mine.’</p> |
| <p>(c) ṭṣṣ = n ǎn = ǎ
 cow = DEF 1sPs = COP
 ‘The cow is mine.’</p> | <p>(d) ṭṣ-gg = ṣ ǎnəgg = ǎ
 cow-PL = DEF 1sPp = COP
 ‘The cows are mine.’</p> |
| <p>(e) ṭṣṣ = n sèggār ǎn = ǎ
 cow = strong 1sPs =
 DEF COP
 ‘The strong cow is mine.’</p> | <p>(f) ṭṣ-gg sèggār-g = ǎ ǎnəgg = ǎ
 cow-PL strong-PL = 1sPp =
 DEF COP
 ‘The strong cows are mine.’</p> |

It is also possible to have two copular clitics attached to two coordinate constituents

- (37a) ṭṣṣ níí ḍǎmǎ = **n** ǎn = **ǎ**
 cow this blind = COP 1sPs = COP
 ‘This cow is blind and mine.’
- (b) ṭṣ-gg nīi ḍǎmǎ-g = **ǎ** ǎnəgg = **ǎ**
 cow-PL these blind-PL-COP 1sPp = COP
 ‘These cows are blind and mine.’

of the predicate.

With the limited data collected, it could not be determined if nominal predicates are possible in possessive clauses. However, they are possible in equative clauses as shown in (38a-b) below.

14.6.3 Equative clauses

The copular clitic is also used in equative clauses. As in other past tense non-verbal clauses, past tense equative clauses are formed with the past continuous copula *tā-án* as in (38b).

(38) **Equative copular clauses**

- (a) *jēn* *bàà.ṣ = n* (b) *jēn* *tāán* *bààḁ*
 person father=COP person COP.CONT.P father
 ‘The person is a father.’ ‘The person was a father.’
- (c) *fēētṣā = n* *jēn* *ḁù.ī = n*
 Feetfa=DEF person black=COP
 ‘Feetfa is a black person.’

There is no difference in the clausal construction between adjectival clauses as in (33) of 14.6.1 and the nominal non-verbal clauses in (38).

14.6.4 Locative clauses

Non-past locative and presentational non-verbal clauses are formed with a different set of copulas. Past tense locative clauses are formed with the past continuous copula *tā-án*.

Table 58: Non-past locative and presentational copulas

	SG	PL
Locative copula	<i>īn, éēn</i>	<i>ēggàn</i>
Locative copular clitic in noun phrase	<i>= Ān</i>	<i>= Ān</i>
Locative copular clitic in relative clause	<i>= ÉĒn</i>	<i>= ÈÈ</i>

The singular locative copula *īn, éēn* has free variation in vowel quality independent of the [ATR] quality of the words surrounding it. The noun phrase of locative clauses can be unmarked for definiteness as in (39a-b) or definite as in (c-d). In either, the copular clitic *=Ān* can take the place of *īn*.

(39) **Singular locative clauses**

- (a) *jāā* *bánḑāl* ***īn*** *wéé* *bèṅɲ*
 person weak LCM house beside
 ‘A weak person is beside a house.’
- (b) *jāā* *bánḑāl* = ***ān*** *wéé* *bèṅɲ*
 person weak=LCM house beside
 ‘A weak person is beside a house.’
- (c) *jāā* = *n* *bánḑāl* = (***ā***) ***īn*** *wéé* *bèṅɲ*
 person=DEF weak=(DEF) LCM house beside
 ‘The weak person is beside a house.’
- (d) *jāā* = *n* *bánḑāl* = ***ān*** *wéé* *bèṅɲ*
 person=DEF weak=LCM house beside
 ‘The weak person is beside a house.’

The plural locative copula is *ēggàn*. The copular clitic =*Ān* can take the place of *ēggàn* when attached to noun phrases unmarked for definiteness as in (40a-b) or when attached to definite noun phrases as in (c-d).

(40) **Plural locative clauses**

- (a) *jōgg* *bánḑāl-g* ***ēggàn*** *wéé* *bèṅɲ*
 people weak-PL LCM house beside
 ‘Weak people are beside a house.’
- (b) *jōgg* *bánḑāl-g* = ***ān*** *wéé* *bèṅɲ*
 people weak-PL=LCM house beside
 ‘Weak people are beside a house.’
- (c) *jōgg* *bánḑāl-g* = ***à*** ***ēggàn*** *wéé* *bèṅɲ*
 people weak-PL=DEF LCM house beside
 ‘The weak people are beside a house.’
- (d) *jōgg* *bánḑāl-g* = ***ān*** *wéé* *bèṅɲ*
 people weak-PL=LCM house beside
 ‘The weak people are beside a house.’

14.6.5 Presentational clauses

Presentational clauses are formed with the same copulas as locative clauses, along with the adverb *tù* ‘there’. The copular clitic =*Ān* can take the place of *īn* when attached to an unmarked noun phrase as in (41b) or when attached to a definite noun phrase as in (d).

(41) **Singular presentational clauses**

- (a) ʔóó sèggār **fīn** ʔù
cow strong LCM there
'There is a strong cow.'
- (b) ʔóó sèggār = **ān** ʔù
cow strong=LCM there
- (c) ʔóó = n sèggār **fīn** ʔù
cow=DEF strong LCM there
'There is the strong cow.'
- (d) ʔóó = n sèggār = **ān** ʔù
cow=DEF strong=LCM there

Similarly, the copular clitic =*Ān* can take the place of *ēggān* when attached to an unmarked plural noun phrase as in (42b) or when attached to a definite plural noun phrase as in (d).

(42) **Plural presentational clauses**

- (a) ʔó-gg sèggār-g **ēggān** ʔù
cow-PL strong-PL LCM there
'There are strong cows.'
- (b) ʔó-gg sèggār-g = **ān** ʔù
cow-PL strong-PL=LCM there
- (c) ʔó-gg sèggār-g = **à** **ēggān** ʔù
cow-PL strong- LCM there
PL=DEF
'There are the strong cows.'
- (d) ʔó-gg sèggār-g = **ān** ʔù
cow-PL strong- there
PL=LCM

Past tense presentational clauses must use the copula *ʔā-ān*.

(43) **Past tense presentational clauses**

- (a) ʔóó **ʔāán** ʔù
cow COP.CONT.P there
'There was a cow.'
- (b) ʔó-gg **ʔāán** ʔù
cow-PL COP.CONT.P there
'There were cows.'

14.6.6 Non-verbal question clauses

The question marker *à* indicates a question with a yes/no response and can mark non-verbal or verbal question clauses. This section discusses how it is used in non-verbal questions and section 15.3 presents its use in verbal questions. Question clauses have the same construction as equivalent declarative clauses except for the question marker.

The question marker for non-verbal clauses is most commonly clause-final. The question marker *à* is independent from stems, evidenced by lack of [ATR] quality change in the question marker in (44b).

- (44a) ʔɔ́ɔ́ = n sɛ̀gā́r à (b) ʔɔ́ɔ́ = n ɖ̀əm̃ = n à
 cow = DEF strong QM cow = DEF blind = COP QM
 ‘Is the cow strong?’ ‘Is the cow blind?’

When the copular clitic =*À* is at the same place in the clause as the question marker, it is joined to the question marker (45b) instead of to the word it follows as in declarative clauses such as (45a).

- (45a) ʔɔ́-gg = ɔ́ ɖ̀əm̃-g = ɔ́ (b) ʔɔ́-gg = ɔ́ ɖ̀əm̃-g à = à
 cow-PL = blind- cow-PL = strong-PL COP = QM
 DEF PL = COP DEF
 ‘The cows are blind.’ ‘Are the cows blind?’

The question marker is shown in demonstrative copular clauses (46a-b), adjectival clauses (c-f), equative clauses (g-h), and presentational clauses (i-j). In (e-f), the predicate is fronted for focus, and the copula and question marker are fronted along with it.

(46) **Non-verbal question clauses**

- (a) ʔɔ́ɔ́ = n (néé) à (b) ʔɔ́-gg = ɔ́ (nɛ̀ɛ̀) à
 cow = COP this QM cow-PL = COP these QM
 ‘Is this a cow?’ ‘Are these cows?’
- (c) ʔɔ́ɔ́ = n ɖ̀əm̃ = n à (d) ʔɔ́-gg = ɔ́ ɖ̀əm̃-g à = à
 cow = DEF blind = COP QM cow-PL = DEF strong-PL COP = QM
 ‘Is the cow blind?’ ‘Are the cows blind?’
- (e) ɖ̀əm̃ = n à ʔɔ́ɔ́-n (f) ɖ̀əm̃-g à-à ʔɔ́-gg = ɔ́
 blind = COP QM cow-DEF strong-PL COP-QM cow-PL = DEF
 ‘Is the cow blind?’ ‘Are the cows blind?’
- (g) ʔɛ̀ɛ̀m néé ʔɔ́ɔ́ = n à (h) ʔɛ̀gg nɛ̀ɛ̀ ʔɔ́gg à-à
 thing this cow = COP QM things these cow-PL COP-QM
 ‘Is this thing a cow?’ ‘Are these things cows?’
- (i) ʔɔ́ɔ́ = n ʔù à (j) ʔɔ́-gg = ɔ́n ʔù à
 cow = LCM there QM cow-PL = LCM there QM
 ‘Is there a cow?’ ‘Are there cows?’

14.6.7 Non-verbal negative clauses

The negative particle *wá* is clause final and does not attach to the word it follows. Non-verbal negative clauses have the same construction as equivalent affirmative clauses except for the negative marker. The negative marker is shown in

demonstrative copular clauses (47a-b), adjectival clauses (c-d), presentational clauses (e-f), and past presentational clauses (g-h).

(47) **Non-verbal negative clauses**

- (a) $\text{tʃʃ}=\text{n}$ **wá** (b) $\text{tʃ-gg}=\text{ɔ}$ **wá**
 cow = COP not cow-PL = COP not
 ‘(This) is not a cow.’ ‘(These) are not cows.’
- (c) $\text{tʃʃ}=\text{n}$ $\text{d̥əm̩}=\text{n}$ **wá** (d) $\text{tʃ-gg}=\text{ɔ}$ $\text{d̥əm̩-g}=\text{ɔ}$ **wá**
 cow = DEF blind = COP not cow-PL = DEF strong-PL = COP not
 ‘The cow is not blind.’ ‘The cows are not blind.’
- (e) $\text{tʃʃ}=\text{n}$ tù **wá** (f) $\text{tʃ-gg}=\text{ɔn}$ tù **wá**
 cow = LCM there not cow-PL = LCM there not
 ‘There is no cow.’ ‘There are no cows.’
- (g) $\text{tʃʃ}=\text{n}$ t̥áán tù **wá** (h) $\text{tʃ-gg}=\text{ɔn}$ t̥áán tù **wá**
 cow = COP. there not cow- COP. there not
 LCM CONT.P PL = LCM CONT.P
 ‘There was no cow.’ ‘There were no cows.’

14.7 Relative clauses

Relative clauses are introduced with the relativizer *ná/nà* ‘who, which, that’ which agrees in number with the head noun it follows. Relative clauses have been attested to modify noun subjects as in (48), objects as in (49), and copular complements as in (50).

- (48) jēn **ná** $\text{ón}=\text{í}$ $\bar{\text{ē}}$ pəl-i tád d̥-n̩-mùu-gg .
 person REL.SG bad = RDM 3sN fall-it down PP-3pO-front-PL
 ‘The person which was bad fell down in front of them.’ (Thng7-8)
- (49) kórá kōr **ná** $\text{ón}=\text{í}$.
 speaks word REL.SG bad = RDM
 ‘She speaks rudely (lit. the word which bad).’ (Assa6)
- (50a) càdr $\text{néé}=\text{n}$ é $\text{sālāḍ}=\text{à}$ è āld è jēgg
 tale this = DEF of hyena.GEN = COP of fox.GEN of thing.PL.GEN
 ‘This story is about a hyena, fox, and some
- (b) é $\text{lēēl-ēēgg}=\text{à}$ bígg **nà** àn-n $\text{léél-éēgg}=\text{è}$
 of grass.GEN-PL = COP some REL.PL stay-INF grass-PL = RDM
 wild forest animals (lit. some things that live in the grass).’ (Nyee1-2)

The relativizer *ná/nà* can also be used pronominally as in (51).

- (51) **nà** āgg biɣɣə dáāgg é ɲə̌əgg = í
 REL.PL 1pN left two in behind = SBO
 ‘Those which we left behind . . .’ (Thng7)

Relative clauses differ from subordinate clauses in the conjunctions introducing the clause, in the clause-final clitics, and in marking for definiteness. As will be discussed in 15.2, the subordinate conjunctions *é gārā* ‘when, while’, *é kārā* ‘because’, (*ār*) ‘if’, *wār* ‘but’ introduce subordinate clauses instead of the relativizer *ná/nà*. As shown in 7.7 and 8.3.8, the clause-final subordinate clitic is always =*É* with High tone, whereas the relative clause clitic agrees in number with the head noun =*É*/=*È*. Finally, subordinate clauses are not distinguished for definiteness, but many relative clauses are.

Relative clauses can take the place of noun modifiers which are either marked or unmarked for definiteness. Thus, relative clauses are also marked or unmarked for definiteness. In (48-50), the relative clauses are definite, whereas in (51) the relative clause is unmarked for definiteness. Most commonly the head noun is unmarked for definiteness if the relative clause has a definite clitic. Singular definite clitics on relative clauses have High tone and plural definite clitics have Low tone.

Table 59: Definite relative clause clitics

	SG	PL
Short	= <i>É</i>	= <i>È</i>

In noun phrases with dative, accompaniment, and subordinate clitics, there is no marking for definiteness and the noun phrases are ambiguous for definiteness. However, in relative clauses with such nouns, there is a definiteness distinction, except with dative relative clauses which cannot attach a dative clitic to semantically indefinite relative clauses. Some clitics such as the dative merge with the definite relative clause clitic (= *É*=*Án* becomes =*ÉĒn*), but other clitics such as the accompaniment and subordinate follow the definite relative clause clitic (= *É*=*nĒ* becomes =*ÉÉ*=*nĒ*, where =*nĒ* is the accompaniment clitic attaching to vowel-final stems). This definite marking is shown in (52) where the same definite relative clause clitics attach to clause-final nouns, adjectives and verbs—all consonant-final. Dashes indicate there are no clitics on the clause-final word, whereas an x indicates the word category cannot occur as definite.

(52) **Definite with dative, accompaniment, and subordinate markers on consonant-final words**

Final	SG	PL	SG	PL	SG	PL	SG	PL
			DEF	DEF	REL	REL	RDM	RDM
N	---	-gg	=Á	=Á	---	---	=É	=È
ADJ	---	-gg	=Á	=À	---	---	=É	=È
V	H	L	x	x	---	---	=É	=È
N DAT	=Án	=Án	=Án	=Án	x	x	=ÉÈn	=ÈÈn
ADJ DAT	=Án	=Án	=Án	=Án	x	x	=ÉÈn	=ÈÈn
V DAT	x	x	x	x	---	---	=ÉÈn	=ÈÈn
N ACM	=É	=É	=É	=É	=É	=É	=ÉÉ=nÉ	=ÈÈ=nÉ
ADJ ACM	=É	=É	=É	=É	=É	=É	=ÉÉ=nÉ	=ÈÈ=nÉ
V ACM	x	x	x	x	---	---	=ÉÉ=nÉ	=ÈÈ=nÉ
N SBO	=É	=É	=É	=É	=É	=É	=ÉÉ=nÉ	=ÈÈ=nÉ
ADJ SBO	=É	=É	=É	=É	=É	=É	=ÉÉ=nÉ	=ÈÈ=nÉ
V SBO	x	x	x	x	---	---	=ÉÉ=nÉ	=ÈÈ=nÉ

In (53), nouns, adjectives and verbs are shown at the end of noun phrases and at the end of relative clauses. Each phrase is also shown unmarked and marked for definiteness. The singular definite relative clause marker is =É and the plural definite relative clause marker is =È.

(53) **Definite markers on consonant-final words**

Final	Unmarked	Definite	
N SG	àggáár	àggáár = á	‘hunter’
	jàā ná àggáár	jàā ná àggáár = é	‘person who is hunter’
ADJ SG	jàā bánḍāl	jàā = n bánḍāl = (á)	‘weak person’
	jàā ná bánḍāl	jàā ná bánḍāl = é	‘person who is weak’
V SG	jàā ṇāṇ	jàā = n ṇāṇ	‘person files’
	jàā ná ṇāṇ	jàā ná ṇāṇ = é	‘person who files’
N PL	àggáār-g	àggáār-g = á	‘hunters’
	ṵggg nà àggáār-g	ṵggg nà àggáār-g = è	‘people who are hunters’
ADJ PL	ṵggg bánḍāl-g	ṵggg = (ḍ) bánḍāl-g = à	‘weak people’
	ṵggg nà bánḍāl-g	ṵggg nà bánḍāl-g = è	‘people who are weak’
V PL	ṵggg ṇāṇ	ṵggg = ḍ ṇāṇ	‘people file’
	ṵggg nà ṇāṇ	ṵggg nà ṇāṇ = è	‘people who file’

In (54), nouns, adjectives and verbs are again shown at the end of noun phrases and at the end of relative clauses, this time with the dative clitic. In noun phrases with an attached dative clitic, the phrase is ambiguous for definiteness, as the dative clitic and no other is attached regardless of whether the phrase is semantically definite or indefinite. And, the distinction cannot be made by adding a definite marker to the head noun in noun phrases with adjectives, such as in *jàā-n bánḍāl-ān. In relative clauses, unlike other clitics, semantically indefinite dative nouns modified by a

relative clause are impossible, such as **jāā ná bāṇḍāl = ān*. When the dative clitic attaches to definite relative clauses, it merges with the definite relative clause marker: $= \acute{E} = \acute{A}n$ becomes $= \acute{E}\acute{E}n$ in singular clauses and $= \acute{E} = \acute{A}n$ becomes $= \acute{E}\acute{E}n$ in plural clauses.

(54) **Dative markers on consonant-final words**

Final	Unmarked	Definite	
N SG	$\grave{a}gg\acute{a}ar = \acute{a}n$	$\grave{a}gg\acute{a}ar = \acute{a}n$	‘to hunter’
	$*j\grave{a}\acute{a} \acute{n}\acute{a} \grave{a}gg\acute{a}ar = \acute{a}n$	$j\grave{a}\acute{a} \acute{n}\acute{a} \grave{a}gg\acute{a}ar = \acute{e}\acute{e}n$	‘to person who is hunter’
ADJ SG	$j\grave{a}\acute{a} b\acute{a}nḍ\acute{a}l = \acute{a}n$	$j\grave{a}\acute{a} b\acute{a}nḍ\acute{a}l = \acute{a}n$	‘to weak person’
	$*j\grave{a}\acute{a} = n \acute{a}nḍ\acute{a}l = \acute{a}n$	$j\grave{a}\acute{a} \acute{n}\acute{a} b\acute{a}nḍ\acute{a}l = \acute{e}\acute{e}n$	‘to person who is weak’
V SG	$j\grave{a}\acute{a} \acute{n}\acute{a} \eta\grave{a}p$	$j\grave{a}\acute{a} \acute{n}\acute{a} \eta\grave{a}p = \acute{e}\acute{e}n$	‘to person who files’
N PL	$\grave{a}gg\acute{a}ar - g = \acute{a}n$	$\grave{a}gg\acute{a}ar - g = \acute{a}n$	‘to hunters’
	$*j\grave{ɔ}gg \acute{n}\acute{a} \grave{a}gg\acute{a}ar - g = \acute{a}n$	$j\grave{ɔ}gg \acute{n}\acute{a} \grave{a}gg\acute{a}ar - g = \acute{e}\acute{e}n$	‘to people who are hunters’
ADJ PL	$j\grave{ɔ}gg b\acute{a}nḍ\acute{a}l - g = \acute{a}n$	$j\grave{ɔ}gg b\acute{a}nḍ\acute{a}l - g = \acute{a}n$	‘to weak people’
	$*j\grave{ɔ}gg = \acute{ɔ} b\acute{a}nḍ\acute{a}l - g = \acute{a}n$	$j\grave{ɔ}gg \acute{n}\acute{a} b\acute{a}nḍ\acute{a}l - g = \acute{e}\acute{e}n$	‘to people who are weak’
V PL	$j\grave{ɔ}gg \acute{n}\acute{a} \eta\grave{a}p$	$j\grave{ɔ}gg \acute{n}\acute{a} \eta\grave{a}p = \acute{e}\acute{e}n$	‘to people who file’

As with dative clitics, in noun phrases with an attached accompaniment clitic $= \acute{E}$, the phrase is ambiguous for definiteness, as the accompaniment clitic and no other is attached regardless of whether the phrase is semantically definite or indefinite. However unlike dative clitics in relative clauses, there is a definiteness distinction for accompaniment nouns modified by a relative clause, as unmarked relative clauses attach the accompaniment clitic alone and definite relative clauses attach the accompaniment clitic (for vowel-final stems $= n\acute{E}$) following the definite relative clause clitic: $= \acute{E}\acute{E} = n\acute{E}$ in the singular clauses and $= \acute{E}\acute{E} = n\acute{E}$ in plural clauses.

(55) **Accompaniment markers on consonant-final words**

Final	Unmarked	Definite	
N SG	$\grave{a}gg\acute{a}ar = \acute{e}$	$\grave{a}gg\acute{a}ar = \acute{e}$	‘with hunter’
	$j\grave{a}\acute{a} \acute{n}\acute{a} \grave{a}gg\acute{a}ar = \acute{e}$	$j\grave{a}\acute{a} \acute{n}\acute{a} \grave{a}gg\acute{a}ar = \acute{e}\acute{e} = n\acute{e}$	‘with person who is hunter’
ADJ SG	$j\grave{a}\acute{a} b\acute{a}nḍ\acute{a}l = \acute{e}$	$j\grave{a}\acute{a} b\acute{a}nḍ\acute{a}l = \acute{e}$	‘with weak person’
	$*j\grave{a}\acute{a} = n \acute{a}nḍ\acute{a}l = \acute{e}$	$j\grave{a}\acute{a} \acute{n}\acute{a} b\acute{a}nḍ\acute{a}l = \acute{e}\acute{e} = n\acute{e}$	‘with person who is weak’
V SG	$j\grave{a}\acute{a} \acute{n}\acute{a} \eta\grave{a}p$	$j\grave{a}\acute{a} \acute{n}\acute{a} \eta\grave{a}p = \acute{e}\acute{e} = n\acute{e}$	‘with person who files’

Final	Unmarked	Definite	
N PL	àggáār-g = é	àggáār-g = é	‘with hunters’
	ɟɔgg nà àggáār-g = é	ɟɔgg nà àggáār-g = èè = nē	‘with people who are hunters’
ADJ PL	ɟɔgg bándāl-g = é	ɟɔgg bándāl-g = é	‘with weak people’
		*ɟɔgg = ɔ bándāl-g = é	
	ɟɔgg nà bándāl-g = é	ɟɔgg nà bándāl-g = èè = nē	‘with people who are weak’
V PL	ɟɔgg nà ɲāɲ	ɟɔgg nà ɲāɲ = èè = nē	‘with people who file’

Similarly, in noun phrases with an attached subordinate clause-final clitic, the phrase is ambiguous for definiteness, as the subordinate clitic and no other is attached regardless of whether the phrase is semantically definite or indefinite. However, in relative clauses, there is a definiteness distinction, as unmarked relative clauses attach the subordinate clitic alone and definite relative clauses attach the subordinate clitic (for vowel-final stems = *nÉ*) following the definite relative clause clitic: = *ÉÉ* = *nÉ* in singular clauses and = *ÈÈ* = *nÉ* in plural clauses where subordinate marker High tone is lowered following Low tone.

(56) **Subordinate *é gārā* markers on consonant-final words**

Final	Unmarked	Definite	
N SG	àggáár = é	àggáár = é	‘when . . . hunter’
	ɟāā ná àggáár = é	ɟāā ná àggáár = éé = né	‘when . . . person who is hunter’
ADJ SG	ɟāā bándāl = é	ɟāā bándāl = é	‘when . . . weak person’
		*ɟāā = n bándāl = é	
	ɟāā ná bándāl = é	ɟāā ná bándāl = éé = né	‘when . . . person who is weak’
V SG	ɟāā ná ɲāɲ	ɟāā ná ɲāɲ = éé = né	‘when . . . person who files’
N PL	àggáār-g = é	àggáār-g = é	‘when . . . hunters’
	ɟɔgg nà àggáār-g = é	ɟɔgg nà àggáār-g = èè = nē	‘when . . . people who are hunters’
ADJ PL	ɟɔgg bándāl-g = é	ɟɔgg bándāl-g = é	‘when . . . weak people’
		*ɟɔgg = ɔ bándāl-g = èè = nē	
	ɟɔgg nà bándāl-g = é	ɟɔgg nà bándāl-g = èè = nē	‘when . . . people who are weak’
V PL	ɟɔgg nà ɲāɲ	ɟɔgg nà ɲāɲ = èè = nē	‘when . . . people who file’

When one or more relative clauses are within another relative clause, the definite relative clause marker can only attach to the final word of the final clause.

(57) **Definite markers on relative clauses within relative clauses**

Unmarked	Definite	
jāā ná bāṇḍāl ná àggáár	jāā ná bāṇḍāl ná àggáár = é *jāā ná bāṇḍāl = é ná àggáár *jāā ná bāṇḍāl = é ná àggáár = é	‘person who is weak who is hunter’
jōgg ná bāṇḍāl-g ná àggáár-g	jōgg ná bāṇḍāl-g ná àggáár-g = è *jōgg ná bāṇḍāl-g ná àggáár-g *jōgg ná bāṇḍāl-g ná àggáár-g = è	‘people who are weak who are hunters’

In genitive noun phrases or relative clauses, either marked or unmarked for definiteness, only the head noun undergoes a change in tone.

(58) **Genitive relative clauses**

Final	Unmarked	Definite	
ADJ SG	jāā bāṇḍāl jāā ná bāṇḍāl	jāā = n bāṇḍāl = (á) jāā ná bāṇḍāl = é	‘of weak person’ ‘of person who is weak’
ADJ PL	jōgg bāṇḍāl-g jōgg ná bāṇḍāl-g	jōgg = (ḍ) bāṇḍāl-g = à jōgg ná bāṇḍāl-g = è	‘of weak people’ ‘of people who are weak’

14.8 Evidentiality

The certainty of an action taking place is marked in the clause rather than on the verb. There are two degrees of certainty or evidentiality for both completive and incomplete verbs.

The normal completive form by itself is a statement of certainty. It states that it is certain the action is completed. Uncertainty in the completive form is indicated by the particle *lā* and optionally by the clause-final subordinate clitic =É. Both degrees of certainty in the completive are shown in (59).

(59) **Degrees of certainty in the completive**

- (a) ē kómsó māgàḍ ‘He cut.’ certainty
(b) lā ē kómsó māgàḍ(= ē) ‘He may have cut a stick.’ uncertainty

(60) **Completive uncertainty paradigms**

- (a) ‘may have bought’ (b) ‘may have buried’
- | | |
|-------------------------|-------------------------|
| lā á mār-sà 1sN | lā á ḍūr-sù 1sN |
| lā ó, ú = mār-sà 2sN | lā ó, ú = ḍūr-sù 2sN |
| lā ē mār-sā 3sN | lā ē ḍūr-sū 3sN |
| lā āgg mār-sà 1pN | lā āgg ḍūr-sù 1pN |
| lā ōgg, ūg = mār-sà 2pN | lā ōgg, ūg = ḍūr-sù 2sN |
| lā ēggà mār-sà 3pN | lā ēggà ḍūr-sù 3pN |
| PRON buy-COMP | PRON bury-COMP |

In (60), completive uncertainty paradigms show that the uncertainty particle occurs before the subject pronoun.

Similarly, the incomplete verb by itself is also a statement of certainty. It states that it is certain the action is ongoing or for certain will be ongoing. Adding the uncertainty particle *lā* before the incomplete verb or attaching the clause-final subordinate clitic *=Ē* indicates uncertainty in the future. With either marker, the other marker is optional.

(61) **Degrees of certainty in the incomplete**

- | | | | | |
|-----|-----|------------------------------------|------------------------|-------------|
| (a) | kóm | māgàḍ | ‘He will cut a stick.’ | certainty |
| (b) | é | lā kóm māgàḍ(= Ē) | ‘He may cut a stick.’ | uncertainty |
| (c) | é | (lā) kóm māgàḍ = Ē | ‘He may cut a stick.’ | uncertainty |

As mentioned in 9.6.2, tone is altered on subject pronouns of incomplete verbs to indicate future actions with certainty. The same future incomplete paradigms in 9.6.2 are given in (62) for ease of reference.

(62) **Future certainty incomplete paradigms**

- | | | | | | | |
|----------------|-------------------------|-----|----------|------------|------------|-----|
| (a) ‘will run’ | (b) ‘will bury the egg’ | | | | | |
| ā | gāl | 1sN | ā | ḍūr | kólólḍ = ó | 1sN |
| | ū = gəl | 2sN | | ū = ḍūr | kólólḍ = ó | 2sN |
| é | gāl | 3sN | é | ḍūr | kólólḍ = ó | 3sN |
| āggā | gāl | 1pN | āggā | ḍūr | kólólḍ = ó | 1pN |
| | ūggū = gəl | 2pN | | ūggū = ḍūr | kólólḍ = ó | 2sN |
| (ēggà) é | gāl | 3pN | (ēggà) é | ḍūr | kólólḍ = ó | 3pN |
| PRON | run. | | PRON | bury. | egg=DEF | |
| | INCP | | | INCP | | |

Unlike in uncertain completive paradigms, in uncertain incomplete paradigms the uncertainty particle occurs after the subject pronoun. In second person forms, the particle attaches to the verb, thereby taking on [+ATR] quality. The same meaning

(63) **Future uncertainty incomplete paradigms**

- | | | | | | | | | |
|-------------------------|--------------------|-----|-----|-------------------------|--------------|---------|------------|-----|
| (a) ‘may run’ | (b) ‘may bury egg’ | | | | | | | |
| á, ā | lā | gāl | 1sN | (b) á, ā | lā | ḍūr | kólólḍ = ó | 1sN |
| ó, 5, ú, | ū = lā = gəl | | 2sN | ó, 5, ú, | ū = lā = ḍūr | | | 2sN |
| ē, é | lā | gāl | 3sN | ē, é | lā | ḍūr | kólólḍ = ó | 3sN |
| āgg(á) | lā | gāl | 1pN | āgg(á) | lā | ḍūr | kólólḍ = ó | 1pN |
| ōggó, 5ggó, | | | 2pN | ōggó, 5ggó, | | | | 2pN |
| ūgg(ú), ūggū = lā = gəl | | | | ūgg(ú), ūggū = lā = ḍūr | | | | |
| ēggà | lā | gāl | 3pN | ēggà | lā | ḍūr | kólólḍ = ó | 3pN |
| PRON | run. | | | PRON | bury. | egg=DEF | | |
| | INCP | | | | INCP | | | |

is communicated regardless of whether the future or non-future subject pronouns precede the uncertainty marker. Second person subject pronouns are optionally [+/- ATR] regardless of the [ATR] quality of the root vowel.

Although uncommon, it is possible for the subject pronoun to be repeated following the certainty marker and before the verb, as in (64).

- (64) á lā á gār fōl
 1sN UNC 1sN dig.INCP hole
 ‘I may dig a hole.’

14.9 Noun phrases

14.9.1 Word order in the noun phrase

The noun phrase can be diagrammed in the order of (65). The head noun is followed by an optional possessive pronoun (POS), and one or more optional adjectives. More than one adjective in the same noun phrase is rare and no prescribed order in the noun phrase can be determined. It is also possible for demonstratives (DEM) to precede alienable possessive pronouns. The possessors of inalienable nouns—kinship terms and body parts—precede the possessed noun, and the possessors of alienable nouns follow the noun.

(65) Noun phrase word order

NP → (POS_{Inalienable}) N (POS_{Alienable}) ({DEM, NUM, ADJ_{Quan}, ADJ_{Qual}})

The adjectival clause of (66a) shows a noun phrase with three adjectives—a demonstrative, numeral, and adjective of quality. The possessive pronoun *śnəgg=ə* ‘mine=COP’ is a noun phrase complement of the non-verbal adjectival clause and the copula clitic is attached. In (b), the second singular possessive pronoun *ś* ‘your’ precedes the kinship term *yāā nāā* ‘aunt, younger mother (lit. mother girl)’—a compound noun phrase, which is followed by a demonstrative.

(66) Noun phrase word order

- (a) tś-gg nī ásámán qūigg=ə śnəgg=ə
 cow-PL these five black=DEF 1sPp=COP
 ‘These five black cows are mine.’

- (b) ə ś yāā nāā néé lèèn-án qūmùùn q-ūūŋ tà
 and 2sPs mother girl this was.coming towards PP-2sO there
 ‘Your mother’s sister was coming to you there.’ (Assa3-4)

- (c) *bii* *fiŋá-d̥ā* *k̥ɔr* *óɔn* *níí* *mā* *māŋ*
 let hear word 1sPs this very carefully
 ‘Listen carefully to what I am saying (lit. this my word)!’ (Womn3)
- (d) *bē-ēn* *ā* *wár-dā* *bààl-g=ā* *nèè* *ónègg* *kāē*
 /beɣ/say- SBJV /war/bring- instrument- these 1sPp all
 CONT.P SBJV PL=DEF
 ‘They were saying to bring all my wood instruments.’

In (c), the first singular possessive pronoun *óɔn* ‘my’ follows the singular noun *k̥ɔr* ‘word’, being an alienable noun, and is followed by the demonstrative *níí* ‘this’. In (d), the third plural possessive pronoun *ónègg* ‘my’ follows the plural alienable noun *bààlgā* ‘instrument’. A demonstrative, possessive pronoun, and quantitative adjective are all present in the same noun phrase, where the demonstrative precedes the pronoun, possibly being fronted for emphasis.

Constructions with relative clauses are preferred above long noun phrases with multiple adjectives. In (67), the relativisor *nà* begins three separate relative clauses.

- (67) *t̥ɔgg* *ónègg* *nà* *ásámán* *nà* *wíɔg* *nà* *ɖùigg=è* *ēggàn* *kālg*
 cows 1sPp REL five REL good REL black=RDM L.COP field
 ‘My five good black cows are in the field.’

14.9.2 Noun agreement

Adjectives, possessive pronouns, and demonstratives agree with nouns in number. Agreement is marked by the geminate velar segment *gg* or tone change. The plural adjective suffix *-gg* is shown in (68a-b) and the possessive pronouns *ónègg* and *ōyègg* are shown in (c-d). In (e-f), High tone in the demonstratives indicates a singular noun and Low a plural noun.

- (68) **Noun agreement**
- | | Noun SG | Noun PL | |
|-----|-----------------------|---------------------------|------------------------|
| (a) | <i>k̥ɔl̥l̥èèð ñi</i> | <i>k̥ɔl̥l̥èèð-g ñi-gg</i> | ‘heavy sword’ |
| (b) | <i>t̥ɔ́ k̥ɔ́ɔ́fār</i> | <i>t̥ɔgg k̥ɔ́ɔ́fār-g</i> | ‘thin cow’ |
| (c) | <i>máā óɔn</i> | <i>máā-gg ónègg</i> | ‘my house’ |
| (d) | <i>máā ōyən</i> | <i>máā-g ōyègg</i> | ‘our house’ |
| (e) | <i>t̥ɔ́ néé</i> | <i>t̥ɔ-gg nèè</i> | ‘this cow/ these cows’ |
| (f) | <i>t̥ɔ́ náá</i> | <i>t̥ɔ-gg nàà</i> | ‘that cow/ those cows’ |

14.9.3 Possessive phrases

Possession of most nouns is expressed by the general preposition *ɛ* (GP) following the possessed noun and preceding the possessor. The possessor is in genitive case

which is marked only by a tone change. Examples (69b, d, f) are incorrect, but given for comparison with the examples of (70).

(69) **Noun possessive phrases**

- | | | | |
|-----|---|-----|---|
| (a) | gàḍáàè é jên
basket GP person.GEN
'basket of person' | (b) | *jên gàḍáàè
person basket |
| (c) | gàḍáàè-gg é jên
basket-PL GP person.GEN
'baskets of person' | (d) | *jên gàḍáàè-gg
person basket-PL |
| (e) | gàḍáàè-gg é jôgg
basket-PL GP person.GEN-PL
'baskets of people' | (f) | *jôgg gàḍáàè-gg
people basket-PL |

Although body part nouns can also be possessed by having the same construction as other nouns as shown in (70a, c, e), it is more common for the possessor of body part nouns to precede the body part without the general preposition and without being in genitive case as in (70b, d, f).

(70) **Body part noun possessive phrases**

- | | | | |
|-----|--|-----|--|
| (a) | lúḍ é jên
leg GP person.GEN
'leg of person' | (b) | jên lúḍ
person leg |
| (c) | lú-ūgg é jên
leg-PL GP person.GEN
'legs of person' | (d) | jên lú-ūgg
person leg-PL |
| (e) | lú-ūgg é jôgg
leg-PL GP person.GEN-PL
'legs of people' | (f) | jôgg lù-ūgg
people leg-PL |

In (71a), the possessor *ūfū* 'tree' precedes the body part noun *ḍḍḍ* 'body' it possesses. As seen in (71b), kinship terms may also form possession by the possessor preceding the possessed noun. In this case, the kinship term possessor *yāā* 'mother' precedes the noun *nāā* 'girl' it possesses.

- (71a) é gārā káhs-s=ī ūfū-n=ī, ē ḍḍḍ-s
GP when struck-COMP=SBO1 hijliij.tree-DEF=SBO 3sN start-INF
'When she struck the tree,

l̥ŋ ē wāɣ-j sɨm ũfú ʒʒŋ.
 until 3sN went-INF down tree body
 (her horns) went deep into the tree (lit. into tree's body).' (Nyee 14-15)

- (b) ð ɔ yáā ɲāā néé lèèn-án ɖũmùùn ɖ-ũũŋ ɬà
 and 2sPs mother girl this was.coming towards PP-2sO there
 'Your mother's sister (lit. your girl mother) was coming to you there.'
 (Assa3-4)

15 Sentence-level syntax

There is morphological marking in subordinate and interrogative clauses, and a discussion of sentence-level syntax is needed to understand these morphemes. In this chapter, we discuss types of clauses in sentences (15.1), coordinating and subordinating conjunctions (15.2), interrogative structures (15.3), as well as focus (15.4).

15.1 Clause combinations

Clauses may be nuclear (main, independent), pre-nuclear (dependent clause preceding a nuclear clause), or post-nuclear (dependent clause following a nuclear clause).

As in (1a), foregrounded nuclear clauses of narrative texts most commonly use infinitive verbs. However, in non-fiction narratives, a completive verb is also common, as shown in (b).

- (1a) ālḍ = á ē **dḍḍs-s** ē **bāḍ-ḍ** bāè = n é sālāḍ = à
 fox = 3sN start-INF 3sN break-INF jug = DEF GP hyena.
 DEF GEN = DEF
 ‘Fox punctured a hole in Hyena’s jug.’ (Nyee21)

- (b) jāḍèèr = ā **wár-sá** kāṇ ḥnī = n ē māḍā
 Jader = DEF carried-COMP group 3sPs = DEF with big.size
 ‘Jadar led his very big group.’ (Fand23-24)

Pre-nuclear clauses are introduced with subordinate conjunctions, the most common of which is the conjunction *é gārā* ‘when’ which often introduces tail-head linkage. In the second line of (2), the subordinate clause refers to ‘an arrival at the well’ implied by the previous nuclear clause, before continuing with the next nuclear clause in the third line. In this way, the subordinate clause links new information with old information contained in the subordinate clause. The verbs of tail-head linkage are most commonly completive verbs, but can also be incomplete or past-continuous.

- (2) ē dḍḍs-s ē wāṭ-ṭ ḍūmùùn wāā = lg ā
 3sN start-INF 3sN go-INF towards water.source = in SBJV
 ‘He set out for the well in order to

mā-ḡ = é fēgg. **é gārā** **lī-j = ɿ** **wāā = lg = é,**
 drink- water GP when /léj/went- water =
 SBJV = IPF COMP = SBO1 in = SBO
 get a drink. When he arrived at the well,

ē gōms-ōggō fēgg = á ē nāā é fōl tód-ì.
 3sN found- water = 3sN lay. GP hole. down-
 D.COMP DEF INCP GEN 3sO
 he discovered that the water was very far down in the well.' (Goat2-4)

Post-nuclear clauses are introduced by a subordinate conjunction as in (3a) or by a subjunctive verb as in (b). In (b), three subjunctive verbs in three separate post-nuclear clauses are introduced by the subjunctive particle *ā* and give the purpose of the nuclear clause. A further subjunctive clause (*ā māḡé fēgg* 'to drink water') is found in the first two lines of (2). Clauses may also be embedded such as the clause *fēgg-á ē nāā é fōl tód-ì* 'water lay down in the hole' of the final line of (2) which is a complement of the verb *gōms-ōggō* 'found'.

- (3a) á wīr-ōn áfād mān táḡ tē,
 1sN /wīr/slaughter-CONT.P blood certain down here
 'I am making a sacrifice here because

é kōrá é māsí néé nār-r-ōn tē.
 GP because GP insect this /nār/drool-CAUS-CONT.N here
 because this insect drools here.' (Jooj9-10)

- (b) ānēḡá ē dōḡs- ē bàg-g áḡé = n
 then 3pN start-INF 3pN grab-INF elephant = DEF
 'Then they elicited the help of an elephant

ā ḡəl-ḡ = ḡḡḡn é ūfú = n táḡ
 SBJV /ḡəl/ram-SBJV.3sN = 3pD GP Tabaldi.tree = DEF down
 in order to break down the Tabaldi tree for them

ā ḡār-rā ā nám-ḡá nālg é nēēēmā = n.
 SBJV be.able- SBJV eat-SBJV.3sN children GP devil.GEN =
 SBJV.3sN DEF
 so as to eat the nyeerma offspring.' (Nye8-10)

15.2 Conjunctions

Conjunctions are a further lexical category, introducing either nuclear or non-nuclear (subordinate) clauses. The coordinate conjunctions of (4) are found to introduce nuclear clauses. Some references in texts from chapter 17 are listed for the

conjunctions. In addition, it is also possible to juxtapose nuclear clauses without any conjunction.

Table 60: Coordinate conjunctions

ò	‘and’	Nyee4, 27, Fand13, Assa1, 3, 9, 12
ḍè	‘then, since’	Fand20, 22, Womn11
tāén	‘then’	Fand28, Minj13
ānēndá	‘then, therefore’	Minj12, Womn11, 17, 24
énná	‘therefore, thus’	Fand5
mìntààðéé	‘thereafter’	Thng4
gôl	‘in that way’	Nyee28
lôḡ	‘then, until’	Goat6, 12, 16, Nyee15, Thng10

The conjunctions *ḍè* ‘then, since’ and *lôḡ* ‘then, until’ are analyzed as coordinate conjunctions, since subordinate marking in the clause never occurs with them. The conjunctions *ānēndá* ‘therefore’ and *ḍè* ‘then, since’ are shown in (4c); the conjunction *lôḡ* ‘then, until’ is shown in (5e).

(4) **Coordinate conjunctions**

- (a) jīnná wā-īn = ŋggə tú = í é kōrá
 that go-INCP = IPF out = SBO GP because
 ‘They remarry because’
- (b) ɔ̌ɔ̌gg = ɔ ná ɔḡ tɛ jīs-ən = ŋggə bèənāḍ = éé = n.
 women = REL bad here /jīs/make- wrongdoing =
 DEF CONT.N = 3pA SBO = DEF
 bad women (their first wives) make them do wrong.
- (c) **ānēndá**, bìì bìì-ḍə bèənāḍ = á àwḍàmàlō **ḍè**
 therefore /bìj/let. /bèè/say- wrongdoing = please since
 IMP IMP.PL DEF
 So let us please stop the wrongdoing since
- (d) bèənāḍ = á tɛ́l ná tá-l-ḍ áāgg = é jóm = ì wá.
 wrongdoing = God REL /tál/create-COMP /jám/want. not
 DEF 1pA = RDM INCP = 3sAM
 God who created us doesn’t want us to do wrong.’ (Womn9-12)

The subordinate conjunction *wār* ‘but’ of table 61 has only been attested to introduce post-nuclear clauses, but the other conjunctions of table 61 introduce pre-nuclear and post-nuclear clauses.

Table 61: Subordinate conjunctions

é gārā	‘when, while’	Goat3, 7, 17, Fand 1, 7, 8, 15
é kōrā	‘because’	Jooj9, Assa5, Tifa6, Womn9
(ār)	‘if’	Goat14, 15, Fand20, Thng21, Womn21
wār	‘but’	Nyee13

The subordinate marking in the clause occurs along with these conjunctions as a clitic on the verb, or clause finally, or both. It is more common for the conjunction *ār* 'if' to be absent from the clause than to be present, although there is subordinate marking regardless. As shown in 10.7, the verb-final subordinate clitic attached in 'if' clauses differs in tone from the clitic attached to verbs of other subordinate clauses.

In (5c), the conjunction *wār* ‘but’ occurs along with the verb-final subordinate clitic =*ī* (SBO3). In (d), the conjunction *ē gārā* ‘when’ occurs along with the verb-final subordinate clitic =*ī* (SBO1) and the clause-final subordinate clitic =*Ē* (SBO). In (4a), the conjunction *kārā* ‘because’ occurs along with the clause-final subordinate clitic =*Ē* on *bēēnād* = *ēē* = *n* ‘wrongdoing = SBO = DEF’ where the definite clitic = *n* for vowel-final stems is also attached.

(5) Subordinating conjunctions

- (a) \bar{e} d5ðs-s \bar{e} bāgg kár = á dí
3pN /d5ðs/start- 3pN /bāg/grab. wild.cow = also
INF SBJV DEF
‘They also elicited the help of the buffalo
- (b) \bar{e} gəl-d=ɪn d-éēn ná tād dí,
3sN /gəl/ram- PP-3sO REL down also
SBJV.3sN = 3sD
in order to break it down for them,
- (c) wār ā gār-rā \bar{e} gəl-d=ɪ d-éēn ná tād wā.
but SBJV /gār/able- 3sN /gəl/ram- PP-3sO REL down not
SBJV.3sN SBJV.3pN =
SBO3
but she was not able to break it down.
- (d) é gārā kāhs-s=ɪ ūfú = n = í, \bar{e} d5ðs-s
GP when /kən/strike- hijliij.tree = 3sN /d5ðs/start-INF
COMP = SBO1 DEF = SBO
When she struck the tree,

- (e) l̥ŋ ẽ wāj-ɟ sím ũfú ɔ̃ŋ.
 until 3sN /wāj/go-INF down tree body
 (her horns) went deep into the tree.' (Nyee11-15)

15.3 Interrogatives

Questions are constructed using the question marker *à* or an interrogative pronoun. Only the interrogative pronouns of (6b-e) agree in number with the noun phrase which they replace. Some interrogative pronouns have a marked form when they replace words which occur in an uncommon position in the clause, but are otherwise unmarked. Other interrogative pronouns only have one form regardless of its position in the clause. When any of the interrogative pronouns are pre-verbal, the clause-final subordinate clitic =É (SBO) of 7.7 and 8.3.8 attaches sentence-finally. When an interrogative pronoun replacing an adverb is pre-verbal, the verb-final subordinate clitic =ɿ (SBO1) of 10.7 is attached to the verb.

(6) Interrogatives

Unmarked		Marked		
SG	PL	SG	PL	
(a) à	à			QM
(b) ŋān	ŋōnóòḍḍè			'who'
(c) ŋānān	ŋānāáḍḍān			'for whom'
(d) é ŋān	é ŋānāāḍ		é ŋōnò	'whose'
(e) níí	níígg	níinā	nííggò	'what'
(f) ná ísín	nà ísín			'which'
(g) tā ísí	tā ísí			'which'
(h) ḍḍì		ḍḍyín		'when'
(i) (fān) ḍá		fān ḍáēn		'where'
(j) (fān) ísí				'how'
(k) ɔ̃rŋ				'why'

In the example questions to follow, typical answers to the questions are in parentheses. The examples are all with singular interrogatives; plural interrogatives take similar constructions.

As discussed in 14.6.6, questions with yes/no responses have the question marker *à* sentence-finally.

- (7) jāā = n bānḍāl t̥ɪr-só t̥óó ná sèggār = één à
 person = DEF weak kill-COMP cow REL strong = RDM QM
 'Did the weak person kill the strong cow?' (Yes./No.)

(8a) **ŋān** **t̥r-sə** **t̥sɔ̌ = n = ɛ** (b) **t̥sɔ̌ = n** **t̥r-s = ɿ** **ŋān**
 who kill-COMP cow = cow = DEF kill- who
 DEF = SBO COMP = PAS.A
 ‘Who killed the cow?’ (The person killed the cow.)

(9) $\text{jāā} = \text{n}$ tīr-só $\text{tśś} = \text{n}$ ṇānān
 person = DEF kill-COMP cow = DEF for whom
 ‘For whom did the person kill the cow?’ (The person killed the cow for his
 uncle.)

(10a) jãã = n ʔir-sá ʔóó é ɲān
 person = DEF kill-COMP cow GP whom
 ‘Whose cow did the person kill?’ (The person killed his uncle’s cow.)

The interrogative pronoun *ɲii* ‘what’ takes the place of non-human nouns. When taking the place of a noun object, it is unmarked post-verbally as in (11a), but has a marked form in (b) where the agented passive clitic =*Ê* is attached to the verb and the clause-final subordinate clitic is attached to the agent.

[illegible]

³⁹ Because of limited data, the pronoun is not presented when taking the place of an animate noun object.

The relativizer *ná* along with the interrogative pronoun *isín* ‘which’ takes the place of a relative clause. When taking the place of a relative clause modifying a subject, it can be pre-verbal as in (12a) or post-verbal as in (b). When taking the place of a relative clause modifying an object, it can be post-verbal as in (c) or pre-verbal in (d). Another way of replacing a relative clause is with the copula *tā* and the interrogative pronoun *isí* ‘how’ as in (e).

- (12a) *jāā ná isín tūr-só tōd = n = ē*
 person REL which kill-COMP cow.GEN = DEF = SBO
 ‘Which person killed the cow?’ (The weak person killed the cow.)

- (b) *tōd = n tūr-s = 1 jāā ná isín*
 cow = DEF kill-COMP = PAS.A person.GEN REL which
 ‘Which person killed the cow?’ (The weak person killed the cow.)

- (c) *jāā = n tūr-só tōd ná isín*
 person = DEF kill-COMP cow REL which
 ‘Which cow did the person kill?’ (The person killed the strong cow.)

- (d) *tōd ná isín tūr-s = 1 jāā = n = ē*
 cow REL which kill-COMP = PAS.A person.GEN = DEF = SBO
 ‘Which cow did the person kill?’ (The person killed the strong cow.)

- (e) *tōd = n tā isí tūr-s = 1 jāā = n = ē*
 cow = DEF COP how kill-COMP = PAS.A person.GEN = DEF = SBO
 ‘Which cow did the person kill?’ (The person killed the strong cow.)

The interrogative pronoun *dāi* ‘when’ takes the place of adverbs of time. It is unmarked post-verbally as in (13a), but has a marked form in (b). As in (13b), when an interrogative pronoun replacing an adverb is pre-verbal, the verb-final subordinate clitic =*ī* (SBO1) used on ‘when’ clauses in 10.7 is attached to the verb *tūr-sō* ‘kill-COMP’.

- (13a) *jāā = n tūr-só tōd = n dāi*
 person = DEF kill-COMP cow = DEF when
 ‘When did the person kill the cow?’
 (The person killed the cow yesterday.)

- (b) *dāyín jāā = n tūr-s = 1 tōd = n = ē*
 when person = DEF kill-COMP = SBO1 cow.GEN = DEF = SBO
 ‘When did the person kill the cow?’
 (The person killed the cow yesterday.)

Similarly, the interrogative pronoun (*fān*) *qá* ‘where’ is a substitute for adverbs of place. It is unmarked post-verbally as in (14a), but has a marked form in (b), again with the verb-final subordinate clitic =*ɿ* (SBO1) attached to the verb *fīr-sɔ̃* ‘kill-COMP’.

- (14a) *jāā* = n *fīr-sɔ̃* *tɔ́ɔ* = n (***fān***) ***qá***
 person = DEF kill-COMP cow = DEF towards where
 ‘Where did the person kill the cow?’
 (The person killed the cow near the house.)
- (b) ***fān*** ***qáēn*** *jāā* = n *fīr-s* = ***ɿ*** *tɔ́ɔ* = n = ***ē***
 towards where person = DEF kill-COMP = SBO1 cow.GEN = DEF = SBO
 ‘Where did the person kill the cow?’
 (The person killed the cow near the house.)

The interrogative pronoun (*fān*) *isí* ‘how’ is a substitute for adverbs of manner. The interrogative pronoun *ɔ́rɔ́ŋ* ‘why’ is a substitute for other verbal adjuncts.

- (15a) *jāā* = n *fīr-sɔ̃* *tɔ́ɔ* = n (***fān***) ***isí***
 person = DEF kill-COMP cow = DEF towards how
 ‘How did the person kill the cow?’
 (The person killed the cow with force.)
- (b) *jāā* = n *fīr-sɔ̃* *tɔ́ɔ* = n ***ɔ́rɔ́ŋ***
 person = DEF kill-COMP cow = DEF why
 ‘Why did the person kill the cow?’
 (The person killed the cow because it was ill.)

15.4 Focus

Focus is constructed by fronting the constituent which the speaker deems as the most important bit of information for the clause. Both subjects and objects can be fronted in focus.

Normally, prepositional phrases used as adjunct conjunctions such as *ē mūn náán* ‘at that time’ occur sentence-initially or following a conjunction.

- (16a) *ɔ̃* ***ē*** ***mūn*** ***náá* = n,**
 and with time that = DEF
 ‘At that time,
- (b) *bāárg* = *á* *ŋáɔ́-á* n *nā*-lg *nà* *ɔ́n-g* = *ì*
 Baggara = DEF /ŋáw/search.for-CONT.P girl-PL REL young-PL = RDM
 the Baggara (people group) were kidnapping young girls.’ (Minj1-2)

However, subjects are brought into focus when placed before such phrases, as in (17). In this concluding sentence of a narrative where a fox and hyena try throughout to capture and eat him, the devil creature is fronted in order to emphasize him as being the victor.

- (17) **ṗéérèṡà = n** é gāránḁá ē áḁ-ḁá gāṡà
 devil = DEF GP that.time 3sN became-SBJV.3sN laughing
 ‘The nyeerma, at that time, went on laughing.’ (Nye34)

In the first line of the *Fandi* text, the main participant is marked as being salient, or most important, by fronting it. The noun subject *Fṡṡṡṡ-n* which normally follows the subordinate conjunction *é gārá* ‘when’ is sentence-initial.

- (18) **fṡṡṡṡ = n** é gārá ḁàḁ-s = ḁ mṡrāā-gg = ē = né
 Fandi = DEF GP when fight- COMP = IPF government-PL = ACM = SBO
 ‘When Fandi fought with the government, . . .’ (Fand1)

Objects are brought into focus by moving them to a pre-verbal position. The object *mīi-n* ‘chicken’ in (19) is out of its normal post-verbal position to emphasize that it is the ‘chicken’ being thrown away and not the ‘goat’.

- (19) **mīi = n** á gān tú
 chicken = DEF 1sN throw.INCP out
 ‘The chicken I am throwing away.’ (Jafr11)

In (20), the relative clause, describing a certain group of women, and functioning as the recipient of the transitive verb /gāf/ ‘give’, is brought to the beginning of the sentence. The meaning is ‘It is those kinds of women and not others whom God blesses.’

- (20) **nà ān tṡ-yègg = i** tṡl gḁf = ŋggèn jègg
 REL stay.INCP doors-theirs = RDM God gives.INCP = 3pD things
 ‘To those who stay in their homes, God gives them things.’ (Womn13)

Pre-verbal objects are emphasized when there is a post-verbal subject and agented passive clitic attached to the verb. The sentence of (21) is the concluding remark of a personal story where a creature repeatedly tries to attack the narrator and other participants. The construction emphasizes the outcome of the object *jāām* ‘someone’ (‘no one’ with negation).

- (21) **jāām kṡḁm-s = i** ḁ-éēn wá.
 someone /káām/bothered.CAUS-COMP = PAS.A PP-3sO not
 ‘No one was bothered by it.’ (Thng25)

16 Conclusion

Gaahmg is a morphologically rich language, employing many suffixes and clitics on nouns, adjectives, and verbs. [ATR] quality and tone distinguish a significant number of lexemes and grammatical functions. Several specific processes of consonant weakening, vowel elision, [+ATR] spreading, [+round] spreading, and morphological tone rules, account for the vast majority of alternations when morphemes are combined.

Gaahmg suffixes differ in alternation and function from clitics, where the former are mostly inflectional morphemes which attach to underlying root segments, whereas the latter are mostly functional, derivational or clausal morphemes which attach to surface stem segments.

All pronouns except interrogatives use vowel features to represent the person referred to, the three persons coinciding with the language's three vowel harmony pairs. Nouns may attach singular and plural suffixes, although plural suffixes are by far more common, and have various segmental and tonal allomorphs which mostly have no semantic correlation with the nouns to which they attach. Nouns and adjectives attach one or more of seven clitics to the stem, each with segmental or tonal allomorphs which depend on the stem-final segment.

The verb has five morpheme slots in addition to the root. Antipassive and causative morphemes attach immediately following the root, followed by modal and aspect morphemes which are also included in the stem. Derivational, pronominal, and clausal clitics attach to the verb stem, many of which have various segmental or tonal allomorphs depending on the subject person or inflectional verb form to which they attach. Gaahmg has morphological marking for both perfect and imperfect aspect, which can both attach to completive and incompletive verbs. Tone is added to verb stems for subject person inflection, tone distinguishes past from non-past tense in the continuous form, and tone replacement is used in the formation of antipassives, causatives, and verbal nouns.

Prepositions, body part locatives, adverbs, and conjunctions are distinct lexical categories. Body part locatives are similar in form and meaning to inherently possessed body part nouns, but are a distinct lexical category in that they do not refer to person and have different tone than body part nouns. Although they are separate morphemes, some of these locatives undergo the same segmental and tonal alternations as clitics, depending on the final segments of the preceding noun of reference.

Agentive passive, agentless passive, antipassive, and causative verb forms are syntactically and morphologically distinct and combine in nearly all possible ways.

In non-verbal clauses, copular clitics may take the place of separate copula particles, which are functionally equivalent but differ in form. Relative clauses are morphologically marked for definiteness and grammatical function in place of the marking on the head noun they modify. Subordinate clauses are morphologically marked clause-finally, and the verbs of subordinate clauses can also be marked according to the type of subordinate clause. Interrogative clauses attach the agented passive when an agent is post-verbal, the clause-final subordinate when any of the interrogative pronouns are pre-verbal, and the verb-final subordinate when an interrogative pronoun replacing an adverb is pre-verbal.

17 Texts

Ten texts of various genres are presented to show Gaahmg morphology and syntax in the context of natural language. There are two folk narratives, two historical narratives, two personal narratives, a conversation, an expository text, and two persuasive texts. The texts were originally recorded on cassette, transcribed, and glossed by speakers of the language, the recordings made from a variety of individuals in the home area. Later, the texts were extensively checked by the present author with speakers of the language and revised accordingly.

17.1 (Goat)

Folk Narrative: “The Goat and the Fox”

Author unknown; 2003; Transcribed by Hashim Orta

1. Mīi mām nām-án = ē é ūlg-ì māj wá.
goat certain beaten GP thirst.GEN-3sO well not
/nām/-CONT = PAS.A /ūlg/
There was once a very thirsty goat.
2. Ē dōs-s ē wāj-ɟ dūmùnn wāā = lg
3sN started 3sN go towards water.source = in
/dōs/-INF /wāj/-INF
He set out for the well
3. ā mā-d = é fēgg. É gārā líɟ-ɟ = ì wāā-lg = é
SBJV drink water GP when went water-in = SBO
/mā-d/-SBJV = IPF.3sN /léɟ/-COMP = SBO
to get a drink. When he arrived at the well,
4. ē gōms-óggō fēgg = á ē nāā é fōl tōd-ì.
3sN found water = DEF 3sN laying GP hole.GEN down-3sO
/gōms/-COMP.D /nāg/INCP /fōl/ /tōd/
he discovered that the water was very far down in the well.
5. Ē pōr-d ē wál-l wāā = lg.
3sN jump 3sN fall well = in
/pōr/-CAUS.INF /wál/-INF
He jumped into the well

6. Ē d5ðs-s ē mā-ḍ fēgg=á l̥ŋ ē bēðér-r.
 3sN started 3sN drink water = DEF until 3sN satisfied
 /ḍ5ðs/-INF /mā-ḍ/-INF /bēðér/-INF
 and drank water until he was satisfied.
7. Ē gārā wīr-s=ī ógg ḍūmùùn ṭàw=ēē=n⁴⁰,
 GP when noticed place towards up = SBO = DEF
 /wēr/-COMP = SBO1
 When he looked up,
8. ē dūgg sōrmāh-gg. Ālḍ=á é yāāgg
 3sN lost wonderment-PL fox = DEF GP awhile
 /dūg/-INF
 he was bewildered (at how far down he was). After a while, Fox
9. ē bā-ḍ-ággā nām-m ā má-ḍá fēgg ḍí.
 3sN appear want SBJV drink water also.
 /bā-ḍ/-COMP.D /nām/-INF /mā-ḍ/-SBJV.3sN
 appeared and also wanted a drink.
10. Ē gōms-óggō mīi=n ē nāā é fōl.
 3sN found Goat = DEF 3sN laying GP hole.GEN
 /gām/-COMP.D /nāg/-INCP /fōl/
 He discovered the goat down in the well.
11. Ē ṭārb⁴¹=ì “Mīi⁴², mīí, ṭā ísí?”
 3sN called goat goat COP how
 /ṭār/-INCP = 3sAM /mīi/
 He called out to him, “Goat, goat, how are you?”
12. Ālḍ=á ē pōr-ḍ=ì ḍ-ééṇ, l̥ŋ ē mā-ḍággā
 Fox = DEF 3sN jump PP-behind.3sO until 3sN drank
 /pōr/-CAUS.INF = 3sAM /mā-ḍ/-COMP.D
 Fox jumped over him (into the well), and drank until

⁴⁰ The definite clitic attaches to adverbs such as *ṭàw* ‘up’ when they function as the object of a preposition as in (Goat7), where *ḍūmùùn* ‘towards’ is an adverb functioning as a preposition. The definite clitic =*n* on vowel-final stems is attached after the subordinate clitic =*ē*. If the definite marker is taken off, the subordinate clitic is short.

⁴¹ Irregular INCP inflection; /ṭār/ becomes *ṭār-bá* in INCP.3sN

⁴² *Mīi* is ‘goat’ in isolation but the tone changes to *mīí* in the vocative.

- ⁴³ Although *lɛŋ* primarily functions as a conjunction as in (Goat12), in (Goat19) it functions as an adverb of *wāŋ* ‘went’.

17.2 (Nyee)

Folk Narrative: “The Nyeerma and the Fox”

Author: Babakir Suliman; Oct 2003; Recorded and transcribed by Hashim Orta

1. Càðr nées = n é sālāð = à è âlð è jēgg
 tale this = DEF GP hyena.GEN = COP with fox.GEN with thing.PL.GEN
 /sālād-à/ /âlð/ /jèg/

This story is about a hyena, fox, and some

2. é lēēl-ēēgg = à būgg nà àn-n léél-ēēgg = è.
 GP grass.GEN-PL = COP some REL.PL stay forest-PL = RDM
 /léél-ēēg/ /àn/-INF
 wild forest animals (lit. some things of grass
 which were staying in grass)

3. Sālāð è ālð = ē dōðs-sò ē wāṭ-j ā
 hyena with fox = ACM starts 3pN go SBJV
 /dōðs/-COMP 3sN /wāṭ/-INF
 Hyena and Fox set out to

4. jāð-ðā rīs-ēgg mān ò kār tāð-ān è d-ēgg = ē.
 look.for gift-PL (Ar) certain and wild- was with PP-3pO = ACM
 /jāð/-SBJV.3pN cow COP-CONT.P
 look for food and a wild buffalo was with them.

5. Ē dōðs-s ē gōms-ōggō jéérēmà = n
 3sN⁴⁴ get.up 3sN found devil.name = DEF
 /dōðs/-INF /gōms/-D.COMP
 On their way they found (offspring of) a nyeerma devil

6. ē kōs-sō ē àn-n ūfú = úl.
 3sN crying 3sN stayed Tabaldi.tree = up
 /kōn/-COMP /àn/-INF
 crying and resting in the Tabaldi (Ar. Hijliij) tree.

7. Ē bèè “Léē ā nám-ðā jéérēmà = n!”
 3pN said come SBJV eat devil.name = DEF
 /bèè/-INF /léj/IMP /nám/-SBJV.1pN
 They said, “Let’s eat the nyeerma!”

⁴⁴ The third singular subject pronoun is used twice in (Nyee5) as a third plural pronoun.

8. $\bar{A}n\bar{e}nd\acute{a}$ \bar{e} $d\bar{o}s-s$ \bar{e} $b\grave{a}g-g$ $\acute{a}n\acute{e}=n$
 then 3pN start 3pN grab elephant = DEF
 / $\bar{d}\bar{o}s/-INF$ / $b\grave{a}g/-INF$
 Then they elicited the help of an elephant
9. \bar{a} $g\grave{o}l-d=\acute{i}gg\grave{o}n$ \acute{e} $\bar{u}f\acute{u}=n$ $t\acute{a}d$
 SBJV ram-for.them GP Tabaldi.tree = DEF down
 / $g\grave{a}l/-SBJV.3sN=3pD$
 to break down the Tabaldi tree for them
10. \bar{a} $g\acute{a}r-r\bar{a}$ \bar{a} $n\acute{a}m-d\acute{a}$ $n\bar{a}lg$ \acute{e} $n\bar{e}\bar{e}r\bar{e}m\bar{a}=n$.
 SBJV be.able SBJV eat children GP devil.GEN = DEF
 / $g\acute{a}r/-SBJV.3sN$ / $n\acute{a}m/-SBJV.3sN$ / $n\bar{e}\bar{e}r\bar{e}m\bar{a}/$
 so as to eat the nyeerma offspring.
11. \bar{E} $d\bar{o}s-s$ \bar{e} $b\grave{a}g-g$ $k\acute{a}r=\acute{a}$ $d\acute{i}$
 3pN starts 3pN grab wild.cow = DEF also
 / $\bar{d}\bar{o}s/-INF$ / $b\grave{a}g/-INF$
 They also elicited the help of the buffalo
12. \bar{e} $g\grave{o}l-d=\acute{i}n$ $d-\acute{e}\bar{e}n$ $n\acute{a}$ $t\acute{a}d$ $d\acute{i}$,
 3sN ram-for.them PP-3sO REL.SG down also
 / $g\grave{a}l/-SBJV.3sN=3sD^{45}$
 in order to break it down for them,
13. $w\acute{a}r$ \bar{a} $g\acute{a}r-r\bar{a}$ \bar{e} $g\grave{o}l-d=\acute{i}$ $d-\acute{e}\bar{e}n$ $n\acute{a}$ $t\acute{a}d$ $w\acute{a}$.
 but SBJV able 3sN ram PP-3sO REL.SG down not
 / $g\acute{a}r/-SBJV.3sN$ / $g\grave{a}l/-SBJV.3pN=SBO3$
 but she was not able to break it down.
14. \acute{E} $g\acute{a}r\acute{a}$ $k\acute{a}hs-s=\acute{i}$ $\bar{u}f\acute{u}=n=\acute{a}$, \bar{e} $d\bar{o}s-s$
 GP when struck hijliij.tree = DEF = SBO 3sN start
 / $k\acute{a}n/COMP=SBO1$ / $\bar{d}\bar{o}s/-INF$
 When she struck the tree,
15. $l\bar{a}n$ \bar{e} $w\acute{a}j-j$ $s\acute{i}m$ $\bar{u}f\acute{u}$ $\bar{o}\bar{o}n$.
 until 3sN went down tree body
 / $w\acute{a}j/-INF$
 (her horns) went deep into the tree.

⁴⁵ As with subject pronouns, third singular dative pronouns are sometimes used for third plural referents.

16. Sàlāḍ = ā è āld = ē ē bēè
 hyena = DEF with fox = ACM 3pN said
 /bēè/-INF
 Hyena and Fox said,
17. “lēē, ā ḍḍ-ḍḍ kár = á!”
 come SBJV milk wild.cow = DEF
 /lēj/IMP /ḍḍn/-SBJV.1pN
 “Let’s milk this buffalo!”
18. Āld = á ē cúg-g ṭàagg mâ ṣàl ē bēè
 Fox = DEF 3sN went door belonging.to hyena. 3sN said
 GEN
 /cúg/-INF /ṣàl/ /bēè/-INF
 Fox went to hyena’s (larger type of hyena than *salad*) house who said,
19. “Ágg cúr = ð ṭṣṣ mán ṭáḍ
 1pN tie cow certain down
 /cúr/INCP = IPF.1pN
 “We tied down a buffalo over there;
20. ágg nām ū = gèù-ḍḍ bāè mán ā ḍḍ-ḍ = ì.”
 1pN want 2sN = give jug certain SBJV milk
 /nām/INCP /gāf/-SBJV.2pN /ḍḍn/SBJV.3pN = 3sAM
 Please, will you give us a container for milking.”
21. Āld = á ē ḍṣṣ-s ē bāḍ-ḍ bāè = n é sālāḍ = à
 fox = DEF 3sN start 3sN break jug = DEF GP hyena.GEN = DEF
 /ḍṣṣ/-INF /bāḍ/-INF
 Fox punctured a hole in the bottom
22. ē bāl é fól. É gārā āld = á ḍḍn = ṭ īigg = í = n,
 3sP bottom GP hole GP when Fox = DEF milking milk = SBO
 = DEF
 /ḍḍn/INCP = SBO1
 of the hyena’s container. While Fox was milking,
23. kúṣ = n ē māl-l fān tàḍ,
 froth = DEF 3sN accumulate on top
 /māl/-INF
 froth formed in the pan and

24. $\bar{i}gg = \acute{s}$ \bar{e} $m\bar{o}l-l = \acute{i}n\bar{o}$ ⁴⁶ $f\bar{a}n$ $\acute{t}\bar{a}\bar{d}$.
 milk = DEF 3sN gathered = to.him on down
 /māl/-INF = 3sD
 milk accumulated for him underneath (he drank it as it ran out the bottom).
25. \acute{E} $g\bar{a}r\acute{a}$ $\acute{d}\acute{o}\bar{o}-s = \bar{l}$ $\bar{i}gg = \acute{s} = r$ $k\bar{a}y = \acute{e}$, \bar{e} $b\bar{e}\bar{e}$
 GP when milked milk = DEF = PF all = SBO 3sN said
 /ḍṣn/-COMP = SBO1 /bèè/INF
 When all the milk was completely milked, he (hyena) said,
26. “ $\bar{A}h$, $w\acute{e}\acute{e}$ $\bar{d}\bar{a}r$ $j\bar{o}$ \bar{a} $g\bar{a}\bar{d}-\bar{d}\bar{a}$ $\bar{i}gg = \acute{s}$ $j\bar{a}lg = \bar{a}n$.”
 oh go hide only SBJV give.to milk = DEF children = DAT
 /wāṭ/IMP /ḍār/IMP /gāf/-SBJV.1pN
 “Let’s go hide in order to give this milk to the children (his own).”
27. \bar{O} $k\bar{u}\bar{o}$ $\bar{a}n\bar{e}\bar{e}n$ \acute{e} $f\bar{o}\bar{i}$ $m\bar{a}n$ $w\acute{a}$ $\bar{a}n\bar{e}\bar{e}n$,
 and froth like.this GP strength certain not like.this
 Since froth does not have any substance,
28. $g\bar{o}l$ \bar{e} $w\bar{a}r-r = \bar{e}$ \acute{e} $\bar{u}\bar{u} = n\bar{i}$ $w\bar{a}r-r$,
 in.that.way 3sN carried GP air.GEN = DEF carry
 /wār/-INF = PAS.A /ùñĩ/ /wār/-INF
 therefore it was blown away,
29. $j\bar{a}lg$ \acute{e} $s\bar{a}l\bar{a}\bar{d} = \bar{a}$ \bar{a} $m\bar{o}\bar{d}-\bar{d} = \bar{u}gg\bar{e}$ $w\acute{a}$.
 children GP hyena.GEN = DEF SBJV drink = they not
 /sàlāḍ-ā/ /māḍ/-SBJV = IPF.3pN
 and Hyena’s children never drank it.
30. \acute{E} $n\bar{a}\bar{a}n\bar{d} = \acute{a}$ $y\bar{a}\bar{a}n$, $\bar{a}l\bar{d} = \acute{a}$ \bar{e} $\acute{a}\bar{d}-\acute{a}gg\bar{a}$ \bar{e} $f\bar{a}\bar{a}m$
 GP day = DEF other Fox = DEF 3sN came 3sN thought
 /ād/-D.COMP
 Another day, Fox brought another idea to
31. $m\bar{a}n$ $\bar{d}\bar{a}\bar{a}n$ $s\bar{a}l\bar{a}\bar{d} = \bar{a}n$. \bar{E} $b\bar{e}\bar{e}$ $\acute{i}n\bar{o}$
 certain different hyena = DAT 3sN said 3sD
 /bèè/INF
 Hyena. He said to him,

⁴⁶ This is the long form of DAT which is usually separate, but here analyzed as attached because of [+ATR] quality spread to the verb root.

32. “Sālād = ā”, ē bēè, “Ū = wór ūūŋ cābb ánēén
Hyena = DEF 3sN say 2sN = carry 2sR up like.this
/bēè/INF /wár/IMP
“Hyena”, he said, “Make yourself upright and go
33. ū = bàg = gón⁴⁷ mōō mán ā nám-ḡā kár níí.
2sN = grab.for.us fire certain SBJV eat cow this
/bàg/IMP = 1pD /nám/-SBJV 1pN
bring us some fire (so that) we may eat this buffalo.
34. jéérēmà = n é gārāḡá ē áḡ-ḡá gāḡà
devil = DEF GP that.time 3sN became laughing
/áḡ/-SBJV.3sN /gāḡ/NOM.SG
The nyeerma went on laughing
35. ē àn-n ūfú = úl ḡēēnē.
3sN stay tree = up only
/àn/-INF
as he remained in the tree.

17.3 (Fand)

Historical Narrative: “Fandi”

Author: Tugul Maktab; Oct 2003 in Khartoum;

Recorded and transcribed by Hashim Orta

1. Fónḡi = n é gārā ḡàḡ-s = ḡ mōrāā-gg = ē = né, bēl-án
Fandi = DEF GP when fought government-
PL = ACM = SBO
/ḡàḡ/-COMP = IPF.3sN /bēl/-CONT.P
When Fandi fought the government, he had
2. ḡìrḡēēn ḡō. Más-sá ḡōgg = ó ḡōl bēè
two.piasters(Ar) only refused people = DEF just said
/máḡ/-COMP /bēè/INF
only two piasters. He denied the people (local officials), saying
3. ē lā ḡōf = ì wá, ē ḡòḡ-s = ŋ = r.
3sN UNC give = it not 3sN gave
/ḡāf/INCP = 3sAM /ḡāf/-COMP = IPF.3sN = PF
he would not give it (money), since he had already given.

⁴⁷ The verb $\bar{u} = b\bar{a}g = g\bar{o}n$ is shortened from $\bar{u} = b\bar{a}\bar{a}\bar{a} = \bar{a}gg\bar{o}n$ ‘/bàg/IMP=1pD’.

4. Ē máð-ð é jǝgg òngg é dāfā,
 3sN refused 3sN people 3pR GP fighting
 /máð/-INF /dāf/.NOM.SG
 He refused (to give money to) the officials by fighting,
5. ē wár-r kòlèèð ā kóm-dá jǝg = ó = r. Énná
 3sN took (sword) SBJV cut people = DEF = EV that.is.why
 /wár/-INF /kóm/-SBJV.3sN
 taking a koleez sword to kill (hack up completely) the people. So,
6. gôl Fónđi bàg-s = **ān** = ěn⁴⁸ líj-j = ĩ é kǝrtūūm tē.
 just Fandi caught-him arrived to Khartoum here
 /bàg/-COMP = PAS = 3sA /lēj/-COMP = IPF.3sN
 Fandi was captured and brought here to Khartoum.
7. Gəf-ōn = ŋggən wārā mǎn é gārā dāf-ān = á tálò = nē.
 given = them paper(Ar) certain GP when collect tax = SBO
 /gəf/-PAS = 3pD /dāf/-CONT.N = PAS
 They (citizens) were given a receipt when the tax money was collected.
8. Bēl mǎn tǎ-ān tū ò gǎð-sā gūrūs = í,
 metal certain was there and give money = SBO (Ar)
 COP-CONT.P /gǎf/-COMP.3sN
 There was a certain metal token, and when (a person) gave money,
9. ē gəf-f-ūn = ì d-óðs.
 3sN give-to.you = it in-hand.2sPs
 /gəf/-INF-2sD-3sAM
 he gave it to you (as certificate of payment).
10. Mǎrāā óð-ð = í tǎān bēèn fǎndi = n ē gǎð-dā
 govern- came again saying Fandi = DAT 3sN give
 ment
 /áð/-INF = IPF.3pN /bē/INCP /gǎf/-SBJV.3sN
 The government came again, again requesting Fandi to pay

⁴⁸ The third singular object pronoun = ěn differs from the expected pronoun by an added *n*, which may be present here to help distinguish the pronoun from the passive clitic alone = āná which also has a final vowel.

19. kólóḍ=ó táḍ. Ē bēē “kólóḍ=ó néé=n ē bēl-ḍā
egg = DEF down 3sN said egg = DEF this = DEF 3sN burst
/bēē/INF /bēl/-COMP
an egg in the ground. He said, “If this egg doesn’t burst,
20. wá=í bà, ḍē mārāā lā ḵīs ḵēēm wá.”
not = SBO oh then government will do something not
/ḵīs/INCP
then (it is a sign that) the government will not do anything.”
21. ò kólóḍ=ó ḍūr-s=ānó ēēl táḍ-ē bà bēl-ḍā wá.
and egg = DEF bury head.3sPs down-3sO oh burst not
/ḍūr/-COMP = PAS /bēl/-COMP
And the egg put in the ground with its top side down did not burst.
22. ḵōgg ē bēē “Wáí-ḍā ḍē kōr
people 3pN said go then word
/bēē/INF /wāḵ/-IMP.PL
The people said, “Let us go since
23. mán ná án=í ēēn ṭù wá.” ḵāḍēēr=ā
certain which bad = RDM it.is there not Jader = DEF
nothing bad will happen (lit. the one thing which is bad is not there).” Jader
24. wár-sá kāḵ īnī=n ē māḍā. Ēgg lēēn-g
carried group 3sPs = DEF with big.size 3pN going
/wár/-COMP /lēṭ/-NOM.PL
led his very big group. They traveled and sang
25. ēgg bōfō ēgg lēē ṭàḍ. Līj-j=ì wāā ḍāl=ō=mōō=n
3pN sing 3pN going up went pond Dal = DEF =
fire = DEF
/bōf/NOM.SG /lēṭ/INCP /lēṭ/-COMP = IPF.3pN
as they went along. They had arrived at the entrance of the Dal water valley
26. mū-ín ē rāg-g ṭù. Ēgg lēēn=g ēgg lēēn=g,
front-3sO 3sN stopped there 3pN going 3pN going
/rāg/-INF /lēṭ/= /lēṭ/=
NOM.PL NOM.PL
and stopped there. They were going to . . . well,

27. $\acute{u} = \text{píl}$ $\text{gàr} = \bar{a}$ súùgg íl g \acute{e} gārā $\text{fěð-ān} = \acute{a}$ $\text{jègg} = \bar{a}$
 2pN = place = market in where placed things =
 know DEF DEF
 / $\text{pél}/\text{INCP}$ / $\text{fěð}/\text{-CONT.P} = \text{PAS}$
 do you know the place in the market in Faaz area where things
28. tád $\text{fáað} = \bar{a}\eta$ tāén à? Mōfátishā \bar{e} bèē
 down Faaz = body then QM policeman(Ar) 3sN said
 / $\text{bè}/\text{INCP}$
 are sold (lit being placed down)? The soldier said,
29. “ péés-ān-á jēn ná $\text{lēēn} = \text{g}$ \acute{e} $\text{gōlg} = \acute{o}$ tì .
 focus person which going GP others = DEF there
 / $\text{péés}/\text{-CONT.N-IMP}$ / $\text{léj}/\text{=NOM.PL}$
 “Aim at the man who is leading the others;
29. $\bar{A}r$ $\acute{u} = \text{bìl-i}$ jōgg kāē wá, bèl jēn $\text{tāmán.}”$
 Hey 2pN = hit people all not hit person one
 / $\text{bèl}/\text{IMP} = \text{IPF.2pN}$ / $\text{bèl}/\text{IMP}$
 Don’t kill all the people; just kill the one man.”
30. jēn \bar{e} $\text{bìl-l} = \text{i}$ q-ē kúnd,
 person 3sN shot = him PP-3sP chest
 / $\text{bèl}/\text{-INF} = \text{3sAM}$
 A person shot him in his chest
31. $\text{mōō} = \text{n}$ \bar{e} bāq-d $\text{gððl} = \bar{o}$ $\text{lō}\eta$ tú \bar{e} tīr-r.
 fire = DEF 3sN penetrated shield = DEF until out 3sN die
 / $\text{bāq}/\text{-INF}$ / $\text{tīr}/\text{-INF}$
 through the shield (armor) so that he died.

17.4 (Jafr)

Third-person True Narrative: Jafariin Waja i Wiləŋ “Jafari Went on a Hunt”

Author: Safadin Hamid; Oct 2004; Recorded and transcribed by Safadin Hamid

1. $\text{Jāfārì} = \text{n}$ \bar{e} mōīd $\text{kūūd} = \text{i}$ wāj-jà \acute{e} wīlòns.
 Jafari = DEF with old.man clan.name = ACM went GP hunting.GEN
 / $\text{wāj}/\text{-COMP}$
 Jafari and an older man of the Kuud clan went on a hunt.

2. jǎfārì = n kún-sú cīl é wilàn-g = ò.
Jafari = DEF blew horn GP hunting.GEN-PL = DEF
/kón/CAUS-COMP /wílàn/
Jafari blew the hunting horn.
3. Ė gārā jōgg = ó fīṇś-s = ŋggə é cīl = i,
GP when people = DEF heard = them GP horn = SBO
/fīṇśn/-COMP = 3pA
When the people heard them (blow) the horn,
4. ēgg dōḍs-s ēgg lād-āggā tú.
3pN started 3pN went out
/dōḍs/-INF /lā-d/-D.COMP
they ran out (to participate in the hunt).
5. Būṇūr-g = ú lā-i tú dī. Ė gārā fīṇś-s = ŋggī
youth-PL = DEF run out also GP when heard
/lā-d/INCP-3sAM /fīṇśn/-COMP = SBO1
The young people ran out. When they heard,
6. jōgg fāṇ bīgg nà būr sēggērg = è lā = i tú dī.
people old some REL remain young = RDM ran out also
/būr/INCP /lā-d/INCP = 3sAM
some older people who were still agile also ran out.
7. jǎfārì = n é mánē jō dād-sā càḍr-ēēgg = á yōḍsò.
Jafari = DEF alone just killed rabbits-PL = DEF four
/dāf/-COMP
Jafari, by himself, killed four rabbits.
8. Māīḍ kūūḍ = ū dād-sā jèēm dēé wá. Būṇūr
old.man person.name = DEF kill thing any not youth
/dāf/-COMP
The old man Kuud didn't kill anything.
9. mán bēl Féēṭfā, dād-sā tày-ēēgg dáāgg. Féēṭfā = n
certain call Feetfa(Ar) killed giraffe-PL two Feetfa = DEF
/bēl/INCP /dāf/-COMP
One youth called Feetfa killed two giraffes. Feetfa
10. ē bèē “Lí-dū ā gād-dā jèēm mōīḍ = ōn.”
3sN said let SBJV give something old.man = DAT
/bēē/INF /līḍ/-IMP.PL /gād/-SBJV.1pN
said, “Let's give something to the older man.”

11. jāfārì = n è Fēētfā = nē ēgg jōgg è dáāgg = ē
 Jafari = DEF with Feetfa = ACM 3sN people with two = ACM
 Jafari and Feetfa, they and everyone,
12. ēgg bēē “Àð, àð!”
 3sN said yes yes
 /bēē/INF
 said, “Yes, indeed!”

17.5 (Jooj)

Personal Narrative: Jen Faa na bel Coojooen “An old man called Joojo”

Author: Hashim Orta; Oct 2003; Recorded and transcribed by Hashim Orta
 (Hashim tells the beginning of a conversation he had with a man named Joojo that he met in the home area. Although not a complete narrative, this portion is presented for its syntax constructions, some of which are not found in other texts.)

1. Á wāṭ-jā é nāāndá mán dūmùùn é Dààl.
 1sN went GP day certain towards GP (valley name)
 /wāṭ/-COMP
 One day I went to Dal Valley.
2. É gārā á lēṭ-j = ē é Dààl = ē, á gōms-óggō jēn
 GP when 1sN arrived GP Daal = SBO 1sN found man
 /lēṭ/-COMP = SBO1 /gōms/-D.COMP
 When I arrived to Dal Valley, I found an old
3. fāā ná bēl-l Còðḥòð.-ēēn, ē àn-n gōi bəl.
 old REL called Joojo-3sO 3sN stay tree.type beneath
 /bēl/-INF /àn/-INF
 man named Joojo, sitting under a Gai tree.
4. á tís-s = īn á bì = īn, “jēn fāā = n, tā isí, bə = i?”
 1sN asked = 1sN said man old = COP how oh =
 him DEF 3sP
 /tís/-INF = 3sD /bēē/INF = 3sD
 I asked him, “How are you old man (respectful greeting)?”
5. Ē bēē “jīn ùùṅ ḡál = ē ūḡúūr-g, ūḡúūr-g?”
 3sN said what bodies.2pPp smell Arab-PL Arab-PL
 /bēē/INF /ḡál/INCP = PAS.A
 He asked, “Why does your body smell like that of Arabs?”

6. Á bèè “Wá, āān ūṅúūr=ú wá.
 1sN said no 1sN Arab=DEF not
 /bèè/INF
 I replied, “No, I am not an Arab.”
7. Ì ú=pōm jí bārè ā?”
 and 2sN=want what now QM
 /jáam/INCP
 What can I do for you?”
8. Āān á bì=īn dí, “Ì 55n ú=jìs-sè jí dí ṭè ā?”
 1sN 1sN said also and 2sN 2sN=did what also here QM
 /bèè/INF=3sD /jìs/-COMP
 I myself also asked him, “And you, what are you doing here?”
9. Ē bèè, “Á wīr-ōn áfáḍ mán táḍ ṭè, é kōrá é
 3sN said 1sN slaughter blood certain down here GP GP
 /bèè/INF /wīr/-CONT.P because
 1sN
 He said, “I was making a sacrifice here because
10. mósí néé nór-r-ōn ṭè.
 insect this drools here
 /nár/-CAUS-CONT.N
 this insect drools here.
11. Míí=n á gān tú,
 chicken=DEF 1sN throw out
 /gān/.INCP
 The chicken I am throwing away,
12. mīí=n á gāf-àn jōgg fāṅ=ān ā nóm-ḍ=ūggè.”
 goat=DEF 1sN give people old=DAT SBJV eat-it
 /gāf/-CONT.N /nām/-SBJV=
 IPF.3pN
 (but) the goat I am giving to the old men to eat.”

17.6 (Thng)

Personal Narrative: Jen e Arsagga “Something that frightened us”

Author: Hashim Orta; Oct 2003; Recorded and transcribed by Hashim Orta

1. Gārā āgg àn t̃àà-gg d̃-āggá máà-gg=é, ʒ̃ð-ʒ̃ðgg=ʒ̃
 when 1pN live door-PL PP-1pO house-PL=SBO woman-PL=DEF
 /àn/INCP
 While we were living in our houses, women
2. t̃ār-s àn⁴⁹. Āgg d̃ʒ̃s-s āgg wā-j wāā=lg f̃ééđʒ̃l.
 called me 1pN start 1pN go water=in early.morning
 /t̃ār/-COMP 1sA /d̃ʒ̃s/-INF /wā-j/-INF
 called me. In the early morning we set out for the water valley.
3. É gārā āgg l̃é-j=ā=é, j̃èèm ē âr-s āāggá.
 GP when 1pN arrived something 3sN frightened-us
 /l̃é-j/-COMP=SBO1=SBO /âr/-COMP 1pA
 When we arrived, something frightened us.
4. ē cúđ-đ t̃àð gùlđū=ūl. M̃nt̃ààðéé
 3sN climbed up tree=up thereafter
 /cúđ/-INF
 and climbed up a tree. After that,
5. āgg k̃ʒ̃é-j āgg t̃ál-l dáāg āgg b̃ì-j āgg g̃ðl-g=ʒ̃
 1pN enter 1pN make two 1pN left 1pP friend-PL=DEF
 /k̃ʒ̃é-j/-INF /t̃ál/-INF /b̃ì-j/-INF
 two of us passed (it) and left our other
6. nà dáāgg èèn é j̃ñ̃ʒ̃gg.
 REL two 3sN GP behind
 two companions behind.
7. Nà āgg b̃ì-j-ð dáāgg é j̃ñ̃ʒ̃gg=í, j̃ēn
 REL.PL 1pN left two GP behind=SBO person
 /b̃ì-j/-COMP
 Those we left behind, the bad thing

⁴⁹The segment *n* in the first singular object pronoun *an* makes a distinction with *a* in the completive suffix of *t̃ār-s̃à* which has no object pronoun.

8. ná ón=í ē pəl-l-ì táđ đ-ñ-mùù-gg.
REL.SG bad=RDM 3sN fall down PP-3pO-front-PL
/pəl/-INF-3sAM
fell down in front of them.
9. Āgg tǎǎ-án āgg Māgsàǎđ āgg tǎǎ-án yǎǎsǎ.
1pN were 1pN Magsad 1pN were four
COP-CONT.P COP-CONT.P
We were four in all, including Magsad.
10. Ləŋ mā é gārǎ jēn âr-s=ìgg=ǐ,
Then even GP when person frightened=them
/âr/-COMP=3pA=SBO1
Then, even though the thing frightened us,
11. āgg kǎǎj-j mǎrèè. Āgg bǐj-j=ì fāgg mǎrèè.
1pN enter somehow 1pN left=it then somehow
/kǎǎj/-INF /bǐj/-INF=3sAM
we were able to go past somehow. We left it somehow,
12. jāām kǎǎm=ǐ⁵⁰ wá.
someone dealt.with=it not
/káām/CAUS=PAS.A.3SP
and no one was bothered.
13. Kǎǎj=ǎ bàg-s ān⁵¹ mǎŋ đ-áán wá.
fear=DEF grabbed me well PP-1sO not
/bàg/-COMP 1sA
I have never been as scared as on this occasion!
14. jèèm âr-s ān ánēén é nǎānd=á mǎn wá.
something frightened me like.this GP day=DEF certain not
/âr/-COMP-1sA
There has never been a day I was as frightened as this.

⁵⁰ *jāām kǎǎm-ǐ* is a shortened version of *jāām kǎǎm-ǐ đ-ēén* ‘someone is bothered by it (CAUS=PAS.A PP-3SP) (Thng25)’; For comparison, *jēn káām jāām* ‘person bothers someone’; *jēn kǎǎm jāām* ‘person bothers.CAUS someone’; *jāām kǎǎm=ǐ jēn* ‘someone is bothered by the person (CAUS=PAS.A)’; *jāām kǎǎm-ǎ* ‘someone is bothered (CAUS-PAS)’.

⁵¹ Final *-n* is used here to make the pronoun obvious.

15. Nāānd = á náán j̄ō á túr-s = ì , j̄ègg = ā
 day = DEF that only 1sN saw = it things = DEF
 /túr/-COMP = 3sAM
 It was only that day in which I saw it that they were
 so frightened of the thing
16. âr-s = ñggì ógg = é. É nāānd = á yāān,
 frightened = them place = SBO GP day = DEF other
 /âr/-COMP = 3pAM
 in that place. On another day,
17. āgg wāj-jā wāā = lg f̄ééḍḍól j̄ō, āggá kāf-ān.
 1pN went water-in early.morning only 1pN draw.water
 /wāj/-COMP /kāf/-CONT.P
 we also went to the water valley early in the morning and drew water.
18. É gārā āgg léj-j = ā = é , j̄ēn m̄ān
 GP when 1pN arrived person certain
 /léj/-COMP = SBO 1 = SBO
 When we arrived, something
19. ná ón = í ē d̄ḍḍs-s ē ḍḍj-j āāggá é m̄iḍḍógg.
 REL.SG bad = RDM 3sN started 3sN stone us GP stones
 /ḍḍḍs/-INF /ḍḍj/-INF 1pA
 bad began pelting us with stones.
20. É ḍḍj-j āāggá é m̄iḍ-óḡ f̄ṛṛḡḡ wá b̄ḍ = ì,
 3sN stoned us GP stone-PL few not oh = SBO
 /ḍḍj/-INF 1pA
 When it pelted us with a lot of stones,
21. á ḡḍl-g = ḡ j̄ām-m ā gāl-ḍà, á b̄ì = ìggḡn⁵²
 1sP friend- want SBJV run 1sN told = them
 PL = DEF
 /j̄ām/-INF /gāl/-SBJV.3pN /b̄èè/-INF = 3pD
 my companions wanted to run, (but) I told them
22. “Wá! Ūgg = ḡḍl wá, ār j̄ègg = ā nà
 no 2pN = run not if things = DEF REL.PL
 /gāl/IMP
 “No, don’t run if the things which frighten you don’t run, (otherwise)

⁵² The long third plural dative pronoun is used.

23. âr-s = ðògg = ē kár-á wá, nām ūgg ηàlg.”
 frightened = you run not break 2pPp necks
 /âr/-COMP = 2pA = SBO2 /kár/-INCP /nām/INCP.3p
 they will break your necks (If you do run, it will harm you).”
24. Āgg gâl-dà wá āgg sábbàr-sà jō màrèè. Āgg wāj-t
 1pN ran not 1pN patient(Ar) only somehow 1pN go
 /gâl/-COMP /sábbàr/-COMP /wāj/-INF
 We did not run; somehow we were patient. We went and
25. āgg bîj-t-ì, jāām kóòm-s = ī d-éēn⁵³ wá.
 1pN left-it someone bothered PP-3sO not
 /bîj/-INF-3sAM /káàm/CAUS-COMP = PAS.A
 left it there (and) no one was bothered by it.

17.7 (Assa)

Conversation: Koraag e yo Assamma “Discussion with Grandmother Assamma”
 Oct 2003; Recorded and transcribed by Hashim Orta

1. Hashim: Tā isí? Ú = bō = ī dāi ò ó lō wāi dāi ?
 is how 2sN = appear when and 2sN UN go when
 COP /bā-d/INCP = 3sAM /wāj/INCP
 How are you? When did you arrive, and when will you go?
2. Assamma Mássēē jìs-ōn-ō māj wá,
 (and following): sickness treating = me carefully not
 jìs/-CONT.N = 1sD
 The Massee sickness is not treating me well,
3. nām-án á sù, sù, sù. ò ó yāā nāā néé
 eating-me deep deep deep and 2sPs mother girl this
 /nām/CONT.N 1sA
 giving me a great amount of pain. Your mother’s sister (lit. your girl mother)
4. lèēn-án dūmùùn d-ūūj ṭà bēēn nām gōō.
 was.coming towards PP-2sO there said want clothing
 /lēj/-CONT.P /bē/INCP /nām/INCP
 was coming to you there, saying she wanted clothing.

⁵³ The prepositional pronoun *d-éēn* ‘by-it’ expresses the agent of the agented passive clause.

5. Kór-ǎn kōr ná lūsú é kōrá kōr ná
was.saying speech REL.SG hot GP because speech REL.SG
/kōr/-CONT.P
(She) was saying harsh words instead of kind
6. cúú = í wá. Kór á kōr ná ǎn = í.
sweet = RDM not speaks word REL.SG bad = RDM
/kōr/INCP 1sA
words. She speaks to me rudely.
7. Bél gōd-gg wá, jègg bígg
has cothing-PL not thing some
/bél/INCP
(This is because) she doesn't have clothing—just some
8. nà ǎŋ t̃ā jùùn á mǎðr-ǎn = ǎn = ǎn jō.
REL bad COP long.ago 1sN was.buy.for.her just
/mǎār/-CONT.P = 3sD = 3sAM
old clothes from long ago (that) I was buying for her.
9. ǎ jēn = á á kúr = ì ǎn = í,
and person = DEF 1sN tell = it 3sD = SBO
/kōr/INCP = 3sAM
(Furthermore), the person (who travels with a message) to tell it (her needs) to
10. bō = ì d̃ùul. Cǎē = n ē kōr
send = him difficult Jae = DEF 3sN say
/bà-d/INCP = 3sAM /kōr/INCP
is difficult to find. Jae (son of Assamma) said,
11. ‘Á bàà ā wáj-jā. Á jām Hášhīm = á
1sN grab SBJV go 1sN want Hashim = DEF
/bàg/INCP /wáj/-SBJV.1sN /jām/INCP
‘I want to go. I want Hashim
12. ā j̃d-dō ð ā wár-d = é ǎnō ráðè.’
SBJV make and SBJV bring 1sD radio
/j̃s/-SBJV.3sN /wár/-SBJV-IPF.3sN
to get me a radio.’
13. Á bì = ǐggèn ‘J̃d-d̃ ù̀ng = ū ǎgg kǎē j̃ō.’
1sN tell = them finish 2pR = DEF 2pN all only
/b̃èè/INF = 3pD /j̃d̃/-IMP.PL
I told them, ‘(Alright, all of you), you all just (go without me).’

- ⁵⁴ The plural suffix *-lg* is irregular.

6. J5gg G55r = ɔ̀ bà ɔ̀s-s = ʒggɔ̀n jègg ɔ̀n-g = ì.
 people Goor = DEF oh became = for.us things bad-PL = RDM⁵⁵
 /áð/-COMP = 1pD
 The Goor tribe became our enemies (lit. to us bad things).
7. J5gg ēgg ɔ̀ð = ì bà, ēgg wár-r jègg = ā ɖ-āggá kãē.
 people 3pN come oh 3pN take things = DEF PP-1pO all
 /áð/INCP = SBO1 /wár/-INF
 When these people come, they take all (our) things from us.
8. Bāárg = á tɛ̀ɛ̀ɔ̀á bēl-án = èèggà mɔ̀sɔ̀r-èèg = ē bà,
 Baggara = DEF here having horse-PL = IPF.3pN oh
 /bēl/-CONT.P = IPF.3pN
 The Baggara had horses;
9. jēn fāā ná bēl-l Mīnjibb bēl-án mɔ̀sɔ̀r jɔ̀ ɖí.
 person old REL named Minjib has horse only also
 /bēl/-INF /bēl/-CONT.P
 the old man called Minyjib also had a horse.
10. Mɔ̀sɔ̀r ūnī bēl-l ʔsúūr. Mɔ̀sɔ̀r ūnī = n ē fīr-sá
 horse 3sPs named Asuur horse 3sPs = DEF 3sN smells
 /bēl/-INF /fīr/-COMP
 His horse was called Asuur. When his horse smelled
11. gɔ̀lg ììng = ɔ̀ ɖí = ní, ē cīl-ɖ ē kón-n wíl,
 others bodies = DEF also = SBO 3sN whistles 3sN cries (sound)
 /cīl/-CAUS.INF /kón/-INF
 the presence of others, he whistled, cried (sound)
12. wíl ē gàp-n ɔ̀gg. Ānēndá jēn fāā ná
 (sound) 3sN digs place therefore person old REL
 /gàp/-INF
 (sound), and pawed the ground (to alert others). So, that old man
13. bēl-l Mīnjibb tǎén ē dɔ̀ɔ̀s-s ē ɔ̀b-b = ì ɖ-éél
 named Minjib then 3sN starts 3sN rides = it PP-on.3sO
 /bēl/-INF /dɔ̀ɔ̀s/-INF /ɔ̀b/-INF = 3sAM
 called Minyjib rode his horse proudly,

⁵⁵ The relative clause definite clitic attaches even without the relativizer *na* in some contexts.

14. ē máà iīŋ ē àn-n mṣṣòr ʒʒl
 3sN prides 3sR 3sN stay horse up
 /mân/INCP /ân/-INF
 taking pride in himself as he sits up on the horse
15. ē páré = n é mṣṣnìl = à ḍ-éès.
 with skin.bag = DEF GP devil.GEN = DEF PP-hand.3sPs
 /mṣṣnìl/
 with an animal-skin bag having demonic power in his hand.

17.9 (Tifa)

Persuasive Text: Tifa E Kassag (Tying of the youth)

Author unknown; 2004; Recorded and transcribed by Hashim Orta

1. Kāssā-gg = á ē būr ē tīū-s-ān = āggā⁵⁶ wá = één = é,
 boy-PL = DEF 3pN remain 3pN were.tied = they not = RDM = SBO,
 /būr/ /tīf/-COMP = PAS = 3pA
 When boys remain not tied up (with Gaahmg rules),
2. ḍr kṣr-ēēgg = á ógg àəgg tīfīḥ tīfīḥ.
 mix.up word-PL = DEF place mouth.1pP quickly quickly
 /ḍr/INCP
 they very quickly get mixed-up
 (lit. they mix up the words in the place of mouths).
3. Tīf-ān é Gāām-g = à ʒū-ḍ-ān būḡūr-g = á táḍ
 tying GP Gaam.GEN-PL = DEF make.sit youth-PL = DEF down
 /tīf/-CONT.N.NOM.SG /gāām-g/ /āb/-CAUS-CONT.N
 The tying of the Gaahmg youth enables them to sit down
4. é mēēḍ é būḡūr-g ānēḍá bà!
 GP rope GP youth.GEN-PL like.this oh
 /būḡūr-g/
 in the rope of youth⁵⁷ like this!

⁵⁶A third plural object pronoun is used here for the semantic role of patient in the passive construction. Compare *ʃggg tīū-s-ə kāsāggā* ‘people tied the boys’; *kāsāggā tīū-s-ān* ‘the boys were tied’; *tīū-s-ān-āggā* ‘they were tied’.

⁵⁷The figurative meaning is ‘The youth become respected members of the community by obeying the Gaahmg rules.’

5. Á bɛ̀ɛ ɬif-ɔ́n wɛ̀dán, ɔ́n wá. Kássā-g = á
 1sN say tying beautiful bad not boy-PL = DEF
 /bɛ̀ɛ/-INF /ɬif/-CONT.N.NOM.SG
 I say, (youth) tying is beneficial and not detrimental. Let boys
6. biì ɬíú-d = ɔ́n = ñggò é kɔ́rá lā ɔ́w = ñggì
 let be.tied = them GP because UNC make.sit = them
 /biì/IMP /ɬif/-SBJV = PAS = 3pA /əb/CAUS.INCP = 3pAM
 be tied because it will help them sit down
7. é ɬɛ̀ɛd ɬāmán ð mɛ̀ɛd é b̀̀ǹ̀r-g = ñ = n.
 GP road one and rope GP youth.GEN-PL = SBO = DEF
 /b̀̀ǹ̀r/
 in one rope of youthful unity.
8. jɔ́gg = ɔ́ nà ɬíú-s = ɔ́n = ñ⁵⁸ ɬál é fáá-gg é fáá-gg.
 people = DEF REL have.been.tied create GP line-PL GP line-PL
 /ɬif/-COMP = /ɬál/INCP.3pN
 PAS = RDM
 Those who have been tied, sit in rows of lines.
9. Āw-ān é b̀̀ggɔ́ɬ. jɛ́n ná b̀̀l-l ɔ́gg íñ = íñ = í
 sitting GP group.PL person REL.SG has place 3sO = RDM = SBO
 /əb/-CONT.N.3p /b̀̀l/-INF
 They usually sit in groups. When a person has a place (in society),
10. jíl = ì ð ná b̀̀l-l = ì wá = éé = né jíl = ì jɔ́ d́.
 knows = it and REL.SG has = it not = RDM = knows = it only also
 SBO
 /jél/INCP = 3sAM /b̀̀l/-INF = 3sAM /jél/INCP = 3sAM
 he knows it, and when he doesn't have a place, he knows that as well.
11. Kásón-gí⁵⁹ ná àð ná é fáá-gg é fáá-gg = é
 friend-N.SG REL sits REL GP line-PL GP line-PL = RDM
 /kásán, kásánáāg/ 'friend' /əb/INCP
 The friendship of sitting in lines is full of

⁵⁸ Word-final HL tone on ɬíú-s = ɔ́n = ñ is from the passive clitic = ɔ́nɔ́ final vowel elision and High tone reassignment to the relative clause definite clitic (ɔ́nɔ́ = ñ 'PAS=RDM' becomes ɔ́n = ñ).

⁵⁹ Kásón-g-í 'friendship' is a derived singular noun.

12. tá tins, ð jél àndās = á ná wāēd = é.
 is teaching and knows living = DEF REL beauty = RDM
 COP /jél/INCP.3s
 good teaching and results in a wonderful life.
13. Bìi kāsā-gg tíú-d = ðn = ñggð lôn pád,
 let boy-PL to.be.tied = they until always
 /bìj/IMP /tíf/-SBJV = PAS = 3pA
 (So), let boys forever and always be tied
14. ð á jām ā tāl kōr é mūn tè jō.
 and 1sN want SBJV create speech GP time here only
 /jām/INCP /tāl/SBJV.1sN /kōr/NOM.SG
 and I will stop talking here.

17.10(Womn)

Persuasive Text: “Women”

Author unknown; 2003; Transcribed from cassette recording by Annaim Karaka

1. Īð-ðgg = ó nà bēl-l jīð-ðgg = ì bà
 woman-PL = DEF REL have husband-PL = DEF oh
 /bēl/-INF
 Those women who have husbands,
2. ð wāē jāām = é māā-gg īl = ì bà!
 and go wrongly = SBO house-PL in = 3sP oh
 /wāj/INCP
 and do bad things in their houses,
3. Bìi fījód-dō kōr óñ nī mā māñ.
 let hear word 1sPs this very carefully
 /bìj/IMP /fījón/-IMP.PL
 please hear what I have to say!
4. Ār á bēl kōr mān é d-ēggè.
 hey 1sN have word certain GP PP-3pO
 /bēl/INCP
 I have something important to say to them.

5. jǝgg nǎ-lg = é nǎ ũ = bīl,
people young.one-PL = RDM REL 2sN = have
/bēl/INCP
The young people you have,
6. Tǝl gǝŭ-s = i ũggúŭn gǎfǎ ē jǝ mǎrèè.
God gave = them 2pD given with only somehow
/gǎf/-COMP = 3sAM /gǎf/NOM.SG
God has given them to you for good reason.
7. Tǎ ā jǝd-d = ǝnǎ jǎām jǎām wǎ.
be SBJV be.done wrong wrong not
COP.3pN /jǝs/-SBJV.3pN = PAS
They are not to be abused.
8. jǝnnǎ jǝgg fūŭi-gg = ǝ wǝin = ũggǝ tú wǝr = ũggǝ
that people male-PL = DEF go out marry
/wǎj/-INCP = IPF.3pN /wǎr/INCP = IPF.3pN
Why do men go out to marry
9. ǝǝgg = é jǝinǝ? jǝnnǎ wǝin = ũggǝ tú = í é kǝrá
women = SBO what that going out = SBO GP because
/wǎj/-INCP = IPF.3pN
a second wife? They remarry because
10. ǝǝǝgg = ǝ nǎ ǝŋ tǝ jǝs-ǝn = ũggǝ bǝènǎd = één.
women = DEF REL bad here making = them wrongdoing = SBO
/jǝs/-CONT.N = 3pA
bad women (their first wives) make them do wrong.
11. Ānēndǎ, bǝi bǝi-dǝ bǝènǎd = á àwǝdǎmǎlǝ dǝ
In.this.way let say wrongdoing = DEF please since
/bǝj/IMP /bǝ/-IMP.PL
So let us please stop the wrongdoing since
12. bǝènǎd = á Tǝl nǎ tǎl-d áǎgg = é jǝm = i wǎ.
wrongdoing = DEF God REL created us want = it not
/tǎl/-COMP 1pA = RDM /jǎm/INCP = 3sAM
God who created us doesn't want us to do wrong.

- ⁶⁰ Irregular 3sN tone; INCP 3sN verbs with underlying High tone would normally have High tone.

21. ǾǾǾgg, àḍ-ḍà é kōr ḍ-Ǿggḍ jǿ-Ǿgg = Ǿ
 women live GP word PP-2pPp husband-PL = DEF
 /àn/-IMP.PL
 Women, if you live only by your husbands'
22. é kōr é Tēl é mǎn = é,
 GP word GP God.GEN GP certain = SBO
 /TéI/
 orders and by God's commands,
23. ū = gâr-ḍà ū àḍ-ḍà mà mân.
 2sN = be.able 2sN live very well
 /gâr/-IMP.PL /àn/-IMP.PL
 you will be able to live very well.
24. Ānēndá bà bì ǾǾ-ǾǾgg = ǿ áḍ-ḍà wǿḍ-Ǿg,
 then oh let woman-PL = DEF become ear-PL
 /bìj/IMP /ǿǾ/-SBJV.3pN
 So, let women hear these words (lit. women become ears)
25. bì fīḡǿ-ḍǿ kōr = é mân.
 let hear word = RDM well
 /bìj/IMP /fīḡǿn/-SBJV.3pN
 Let them hear these words well!

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Samenvatting

The following is a summary of the thesis in Dutch. See section 1.4 for an overview in English.

Gaahmg (Gaam, [tbi]) is een Nilo-Saharaanse taal behorende tot de Eastern Sudanic subgroep. Het wordt gesproken door ongeveer 67.000 mensen in de Ingessana Heuvels in de provincie Blauwe Nijl in Noord-Soedan. Ondanks dat het Gaahmg aanzienlijk meer sprekers heeft dan andere talen in het gebied is er slechts weinig onderzoek naar gedaan.

Gaahmg heeft een rijke vormleer, vooral wat betreft de zelfstandige naamwoorden, de bijvoeglijke naamwoorden en de werkwoorden. Om tot een correcte analyse van de morfemen en hun alternanties te komen wordt eerst de fonologische basis gelegd en worden later de syntactische omgevingen beschreven.

Na het inleidende hoofdstuk 1 worden in hoofdstuk 2 de distributie en de contrastiviteit van fonemen behandeld, evenals fonologische regels, syllabestructuur en toon in wortels. Medeklinkers worden vaak verzwakt aan het einde van een woord en tussen twee klinkers; dit gebeurt zowel binnen de wortel als over morfeemgrenzen heen. [ATR]-harmonie en toon spelen een belangrijke rol in de uitdrukking van lexicale en grammaticale verschillen. Daarom is de fonologische analyse van deze kenmerken van groot belang als basis voor de morfologische analyse.

In hoofdstuk 3 worden de segmentele en tonale morfofonologische regels uiteengezet. Met behulp van deze regels kan het grootste deel van de veranderingen die plaatsvinden als morfemen worden gecombineerd worden verklaard. Hoofdstuk 4 laat zien dat clitica, die andere alternanties en functies hebben dan suffixen, aan meer dan één woordsoort kunnen worden gehecht. Paragraaf 4.2 bevat een discussie van vier criteria waarmee suffixen en clitica van elkaar kunnen worden onderscheiden, onder andere dat suffixen aan de onderliggende vorm van de wortel worden gehecht, terwijl clitica de oppervlaktevorm als basis nemen. In 4.3 wordt aangetoond dat bijvoeglijke naamwoorden een andere woordsoort vormen dan zelfstandige naamwoorden en werkwoorden. Zij treden niet op in een aantal typisch nominale of verbale constructies, en waar ze hun context delen met substantieven of verba zijn er verschillen in de morfologie.

De hoofdstukken 5 tot 13 behandelen de verschillende woordsoorten. Het centrale deel van dit proefschrift betreft de vormleer van zelfstandige naamwoorden (hoofdstuk 6-7), van bijvoeglijke naamwoorden (hoofdstuk 8) en van werkwoorden (hoofdstuk 9-10). De kleinere woordsoorten: voornaamwoorden (hoofdstuk 5), voorzetsels (hoofdstuk 11), lichaamsdeelgerelateerde locatieven (hoofdstuk 12) en bijwoorden hebben weinig tot geen morfologie.

In hoofdstuk 6 zien we dat zelfstandige naamwoorden enkelvouds- en meervoudssuffixen kunnen hebben. Het grootste deel van de enkelvoudige zelfstandige naamwoorden krijgt geen suffix, terwijl een suffix verplicht is als er naar een meervoud wordt gerefereerd. Er zijn verschillende meervoudssuffixen, ieder met meerdere tonale allomorfen. De meesten bevatten het element *gg*. Er lijkt over het algemeen geen samenhang te bestaan tussen de semantiek van het zelfstandige naamwoord en de keuze van het suffix; in sommige gevallen is er wel sprake van een fonologische conditionering.

Hoofdstuk 7 laat zien dat één of meer clitica aan de stam van het zelfstandige naamwoord kunnen worden gehecht. Er zijn zeven sets clitica: copulacliticum, bepaaldheidscliticum, locatief copulacliticum, datiefcliticum, comitatiefcliticum, onderschikkingscliticum en relatiefcliticum. De clitica hebben ieder hun eigen segmentele en/of tonale allomorfen al naar gelang de vorm van het laatste segment van de stam. In hoofdstuk 8 wordt aangetoond dat bijvoeglijke naamwoorden in hun stam- en woordmorfologie op zelfstandige naamwoorden lijken. Het meervoudssuffix bij adjectieven is *-gg*. Dezelfde zeven clitica die met zelfstandige naamwoorden kunnen worden gebruikt treden ook op bij bijvoeglijke naamwoorden.

In hoofdstuk 9 komt de werkwoordelijke stam aan bod, die bestaat uit een wortel en kan worden uitgebreid met morfemen die antipassief, causatief en modaal-aspectuele categorieën uitdrukken. Aspect kan segmenteel in het verbale woord worden uitgedrukt door middel van completieve en continuatieve suffixen. Tijd wordt door de toon op de werkwoordsstam gemarkeerd – hoge toon voor het niet-verleden continuatieve suffix en midden-hoge stijgende toon voor het verleden continuatieve suffix. De infinitief, de subjunctief en de imperatief hebben ook hun eigen suffixen die aan de wortel worden gehecht. Finitie werkwoorden worden vervoegd naar de persoon van het onderwerp door middel van een toon op de laatste lettergreep van de stam: hoge toon voor 3^e persoon enkelvoud, lage toon voor 3^e persoon meervoud en middentoon voor 1^e en 2^e persoon. Hoofdstuk 10 bespreekt de clitica die aan het verbale woord worden gehecht: agentieve passief, passief, gebonden voornaamwoorden van lijdend en meewerkend voorwerp, imperfectum, perfectum, onderschikkend, en markeerders van een definitieve relatieve zin.

In hoofdstuk 14 wordt de zinsbouw besproken, met als doel de functies van de morfemen te verduidelijken. Het deel over werkwoordelijk valentie behandelt de agentieve passief, de passief, de antipassief en de causatief. Bij de niet-werkwoordelijke zin worden twee groepen copula's besproken. Bovendien worden onder meer betrekkelijke bijzinnen, possessieve constructies en congruentie in nominale constituenten behandeld. In hoofdstuk 15 komen dan nevenschikkende en onderschikkende voegwoorden aan bod, evenals vraagzinnen en focus op het subject of het object. Na een aantal slotoverwegingen in hoofdstuk 16 biedt hoofdstuk 17 tien (orale) teksten behorende tot verschillende tekstgenres.

Curriculum vitae

Timothy Mark Stirtz was born in 1971 in Abilene, Kansas of the United States. He received a B.S. in Secondary Mathematics Education from Kansas State University in 1995 and a M.S. in Applied Linguistics from the Graduate Institute of Applied Linguistics in Dallas, TX in 2001. He taught secondary mathematics at Quisqueya Christian School in Port-au-Prince, Haiti 1995-1997, where he met his wife, Toni Kidachi, and they were married in 1996. He studied Arabic 1997-1999 in Amman, Jordan, joined SIL International in 1999, and studied field linguistics 1999-2001 in Dallas, Texas. In 2007, he gained admission to the Leiden University Centre of Linguistics to undertake doctoral research in Gaahmg, and concentrated on this research from April 2007-September 2011. He and his wife with two children, Jonathan and Joshua, have lived in East Africa since 2001.